

Appendix I: Questionnaire used for the study

Construct	Question	Answer Type/Response Options	Intent
Levels of Awareness			
	Which marine/ocean plants/vegetation are you aware of?	Open-ended	Testing general awareness
	How did you become aware of kelp?	Open-ended	Testing information sources
Levels of Knowledge/Experience			
	How would you best describe kelp? South African kelps are: (Select two of the following)	<ul style="list-style-type: none"> i. Sea plants seen floating on the water surface ii. An underwater forest iii. Large seaweed iv. A group of large macroalgae v. Large seagrasses 	Testing factual understanding of kelp
	How did you acquire knowledge on kelp? Choose all that apply to you:	<ul style="list-style-type: none"> i. Personal interaction with kelp ii. Word of mouth iii. Working with kelp (collecting, harvesting, processing, etc.) iv. Studying and researching kelp v. Books, television, movies, or other media vi. Other: 	Testing sources of knowledge
	When did you begin to acquire knowledge about kelp?	<ul style="list-style-type: none"> i. Less than a year ago ii. 1 year ago iii. 2-5 years ago iv. 6-10 years ago v. 11-20 years ago vi. More than 20 years ago 	Testing source and stage of knowledge
	How do you usually experience (see/touch/smell) kelp?	<ul style="list-style-type: none"> i. On the beach ii. In the ocean iii. I do not iv. In a factory v. Other: 	Testing physical experiences with kelp
	How did you get involved in the kelp sector?	Open-ended	Testing history of involvement with kelp

	Do you directly interact with kelp in your daily activities/job/lifestyle? If yes, how? If no, what is your relationship to the kelp sector?	Open-ended	Testing level of interaction kelp (direct vs. indirect)
	On average, how frequently do you interact with kelp?	<ul style="list-style-type: none"> i. Every day ii. 2-3 times a week iii. Once a week iv. 2-3 times a month v. Once a month vi. Rarely (once or less than once in a 3-month period) 	Testing frequency of interaction with kelp
Attitudes			
	How would you feel if we no longer had kelp forests? Why?	Open-ended	Testing emotional response
	Do you believe biodiversity should be protected?	<ul style="list-style-type: none"> i. Yes ii. No iii. It doesn't matter to me 	Testing presence of eco-centric attitudes regarding the conservation of biodiversity
	When I come across kelp, I: (Choose all that apply)	<ul style="list-style-type: none"> i. Look at/appreciate it ii. Touch it iii. Ignore it iv. Remove it v. Collect it vi. Harvest it vii. Avoid it 	Testing response towards kelp regardless of the benefits derived from it
	How does the existence of kelp create opportunities for you? Choose all that apply.	<ul style="list-style-type: none"> i. Kelp creates work for me ii. Kelp increases my job/employment opportunities iii. Kelp provides additional food sources iv. Kelp enhances my job satisfaction v. Kelp improves my recreational experiences vi. Kelp's existence enhances my happiness, contentedness, and/or sense of place" (including improving my mental health) vii. Kelp does not create any opportunities for me viii. Other: 	Testing attitude towards opportunities from kelp

	How does the existence of kelp threaten you? (Choose all that apply)	<ul style="list-style-type: none"> i. Kelp limits my recreational opportunities ii. Kelp limits my livelihood/business iii. Kelp negatively affects my experience of the coast and/or ocean (e.g. unsightly, smelly, etc.) iv. Kelp scares me when I come across it while swimming v. Kelp does not create any threats for me vi. Other: 	Testing attitudes towards threats from kelp
	Have you watched "My Octopus Teacher"? If yes, how did it make you feel?	Open-ended	Testing awareness and attitude towards changing narratives around kelp, and emotional response to the same
Dimensions of value			
	Why is kelp important to you?	Open-ended	Testing perceptions of value without any leading/pre-determined answers
	What are some of the things that reduce your appreciation of kelp?	Open-ended	Testing sources of frustration without any leading/pre-determined answers
	Kelp is important to me because: (Choose all that apply)	<ul style="list-style-type: none"> i. It creates and maintains a healthy marine and coastal environment ii. It regulates air and water quality and improves the climate iii. It absorbs pollutants iv. It can increase my safety from extreme natural events. v. It is not important to me for any of the above reasons vi. It provides a habitat for abalone, rock lobster, and other fish or invertebrates vii. Other: 	Testing perceptions around ecological value
	Please explain your answer:	Open-ended	

	Kelp is important to me because: (Choose all that apply)	<ul style="list-style-type: none"> i. It provides energy, such as fuel from dried kelp ii. I can consume it as an alternative source of food iii. It is a source of food and feed for domestic animals iv. It is used in materials like paint and cosmetic products v. It provides important medicinal and/or genetic resources vi. It contributes to my livelihood and/or job satisfaction. vii. It allows me to procure abalone viii. It is not important to me for any of the above reasons ix. Other: 	Testing perceptions around economic value
	Please explain your answer:	Open-ended	
	Kelp is important to me because: (Choose all that apply)	<ul style="list-style-type: none"> i. It is a source of inspiration for me in terms of art and design ii. It provides opportunities for recreation that give me physical/psychological satisfaction iii. It plays a role in my social life iv. I associate kelp with influential childhood experiences v. It supports my religious and/or spiritual identity and plays a role in rituals, and celebrations. vi. It increases my enjoyment of the sea and/or coast vii. It is not important to me for any of the above reasons viii. Other: 	Testing perceptions around social and cultural value
	Please explain your answer.	Open-ended	

	Rate the following statement according to your level of agreement with it: “I have a moral and ethical obligation to protect kelp forests.”	<ul style="list-style-type: none"> i. Strongly disagree ii. Disagree iii. Neutral iv. Agree v. Strongly agree 	Testing perceptions around the intrinsic value of and relational value towards kelp
	Rate the following statement according to your level of agreement with it: “My seaside experience depends on the knowledge that kelp is flourishing.”	<ul style="list-style-type: none"> i. Strongly disagree ii. Disagree iii. Neutral iv. Agree v. Strongly agree 	Testing perceptions around the intrinsic value of and relational value towards kelp
	Rate the following statement according to your level of agreement with it: “Kelp is important to me because of its value to future generations.”	<ul style="list-style-type: none"> i. Strongly disagree ii. Disagree iii. Neutral iv. Agree v. Strongly agree 	Testing perceptions around bequest value
	My appreciation of kelp is reduced due to: (Choose all that apply)	<ul style="list-style-type: none"> i. Mechanisms of control and rules of access around kelp (e.g. harvest control and regulations). ii. Issues of power and inequality in the kelp sector iii. Its odour and unsightly looks iv. Its ability to take away from my recreational enjoyment of the sea/coast v. Other: vi. None of the above reduce my appreciation of kelp 	Testing which aspects of kelp affect how it is perceived and valued, brings to light any governance issues for further exploration
	Please explain your answer:	Open-ended	
Demographics <i>Note: The demographics section is included at the end so that it doesn't influence answers to the questions asked</i>			
	Age	<ul style="list-style-type: none"> i. 18-35 ii. 36-45 iii. 46-55 iv. >55 v. I prefer not to disclose this information 	.

	Gender	<ul style="list-style-type: none"> i. Male ii. Female iii. Other: iv. I would prefer not to disclose this information 	
	Highest level of education	<ul style="list-style-type: none"> i. Less than Grade 12 ii. Grade 12 iii. Higher certificates and Advanced National (vocational) certificate iv. National Diploma and Advanced certificates v. Bachelor's Degree, Advanced Diplomas, Postgraduate Certificate, B-tech Tertiary Education vi. Honour's Degree, Postgraduate Diploma, and Professional Qualifications vii. Master's Degree viii. Doctor's degree ix. I would prefer not to disclose this information 	
	Occupation	Fill in: _____	
	Number of years in this occupation	Fill in: _____	
	Number of breadwinners in your household	<ul style="list-style-type: none"> i. 1 ii. 2 iii. More than 2 iv. I prefer not to disclose this information 	
	Number of dependants in your household	<ul style="list-style-type: none"> i. 0 ii. 1 iii. 2 iv. 3 v. 4 vi. 5 or more vii. I prefer not to disclose this information 	
	Residential Area	Fill in: _____	
	Number of years living in above residential area	Fill in: _____	

Appendix II: Guiding Questions for Key Informant Interviews

1. General guiding questions (For all individuals)

- How did you get involved with kelp?
- How do you feel when you directly interact with kelp, either on the beach, or in the ocean?
- Do you have any cultural connections to kelp? If so, would you be willing to share them? [Example: cultural connections could include kelp playing a role in rituals/celebrations, kelp being symbolic of something in your community and/or culture, kelp being used in home remedies, kelp featuring in any of your routine practices, kelp being a part of any inherited generational behaviours, etc.]
- Does kelp feature in any of your family/community/religious/spiritual customs and traditions? Do you have any childhood memories with kelp?
- Does kelp feature in any of your traditional folklore/legends/stories? If so, would you be willing to share some of these?
- From your perspective, what are some of kelp's most important contributions/uses?
- Have you noticed any changes in the abundance and distribution of kelp in recent years?
- Have you noticed a change in attitudes towards kelp ecosystems in recent years? If so, what factors do you think are responsible for these changing attitudes?
- Have you watched "My Octopus Teacher"? If so, did the documentary influence your views about kelp?
- Is there anything that may enhance your involvement with kelp? Is there anything that diminished your involvement with kelp, or an area of concern in this field that you'd like to share?

2. Additional questions for key informants by actor group

i. Kelp and/or Abalone Industry Actors

- What does your typical day as a [choose appropriate title: kelp harvester; kelp processor; kelp sector management staff] consist of? Would you be able to run me through your day?
- Where is most of the kelp used as abalone feed sourced from?
- As an expert in the abalone industry, what are your views on kelp and its importance with regards to abalone?
- Do you view kelp only as a resource or have your interactions with it contributed to any sort of cultural or social value from your perspective?
- Do you enjoy working with kelp, whether directly or indirectly? What are the most rewarding aspects of working with kelp? Do you consider these activities beneficial? What do you dislike about it?
- Aside from your work, do you use kelp in any other way? (For instance, do you collect kelp for personal consumption as food, or perhaps use it in traditional medicine or home remedies?)

- Is the harvest and trade of kelp your primary source of income? Do you receive any others benefits from the harvest and trade of kelp? If so, would you be willing to share these?
- How did you learn your [kelp collecting; kelp processing] skills? Who taught you? When? What was the learning process like? What is the most challenging or difficult aspect to learn? Why?
- Are there any conflicts of interest between different kelp companies or with spheres of governance? If so, please elaborate on them.
- Have you noticed any conflicts of interest between various kelp user groups?
- What are your thoughts on how seaweed, and specifically kelp, is managed in South Africa?

ii. Environmental Managers and/or Conservationists

- Can you briefly run me through the governance and management of kelp at various levels of government, and your specific role in this?
- Could you tell me a little bit about how seaweed collection rights are granted and how collection thresholds/limits are decided? Are these decided solely by DFFE or do provincials structures and/or district municipalities also contribute to the process?
- Respondents have indicated that they felt as though there could be issues of inequality when working with kelp and found the mechanisms of control and regulations around kelp could be problematic. What are your thoughts on why this might be the case?
- Are there any conflicts of interest between different kelp management bodies? Have you noticed any conflicts of interest between various kelp user groups?
- Would you say the management of seaweed in South Africa is complex, or is the process is fairly straightforward? What are some of the main issues in terms of seaweed and kelp management?
- Do you have a particularly special or meaningful interaction with kelp that you might share?

iii. Recreational Users and/or Coastal Community Members

- How does your role/lifestyle relate to your use of kelp?
- How do you experience kelp? How often do you interact with it?
- As a recreational user of kelp, have you noticed any tensions or issues with regards to kelp management between the population you represent, and conservation authorities in the area?
- Do you have a particularly special or meaningful interaction with kelp that you might share?