

## Appendix 1. Interview Protocol

We provide the interview protocol used for semi-structured interviews in Kona.

A similar protocol was implemented in British Columbia; see Gould et al. (2014, A protocol for eliciting nonmaterial values using a cultural ecosystem services frame, *Conservation Biology*) for reflections on the protocol based on the experience in both sites.

### Contributions of Ecosystems to Local Communities

Before interview:

- Set up map, camera, and tokens
- Make sure recorder is functioning

The interview starts with:

- Introduction of interviewer
- **Consent form** and confidentiality agreement, which includes project description
- Reminder: that this is an **exploration** and there are no right or wrong answers
- Thanking participant in advance

*Start the digital recording device.*

#### Section 1- Start with background questions.

What is your name? Where were you **born**?

How **long have you lived in Hawai‘i**? How about on the **Big Island**? Here in **Kona**?

Are you currently working, between jobs, or a student?

What is your **occupation**?

Do you mind telling me **how old** you are?

Prompt: If you don't want to share your age, just a ballpark would be fine!

Do you have **children**? If so, what are their **ages**? Do you have mo‘opuna (**grandchildren**)?

What **ethnic groups** do you consider yourself part of?

If you had to choose, which ethnic group would you say you **most** identify with?

Would you be willing to share one experience OR a few specific cultural activity experiences, which are tied to the Kahalu‘u or Honaunau areas?

I'd love to get a sense of how often you participate in those activities. So, how often have you participated in the activities you mentioned in the past 6 months?

**Section 2-  
Activities in the forest and how you think about the forest.**

[Put out map and explain the colors and ahupua'a boundaries]

What **activities do you do** related to the forests on this map? Using this map, can you show me where you do those activities?

[Mark with black marker]

Just a note: I may say aloud the places you point to as you tell me what you do in certain places. This is so that we have a recording that includes the "pointing" you're doing.

[If appropriate]: **How did you come to have your position** at X organization? [Doesn't need to be a job; could be an informal relationship]

Can you tell me **if and/or why your involvement** in [your forest-related business or organization] is **important to you**?

Has your interest or involvement in issues/business related to land up mauka changed over time? If so, how?

Do you think of the **health of the forests up mauka and your own well being as connected** in any way?

If so, can you describe that link? How does it work, how do you know it exists, or how strong is that link?

**Section 3- “Health” of Forest**

What does the phrase or idea of “**a healthy forest ecosystem**” mean to you? What things first come to mind when you hear that phrase?

When you think of a “healthy forest ecosystem,” are there parts of that system that come to mind in particular? (What are those parts, and how do you know if a given part is healthy or not?)

Prompt: Are there certain things that indicate a healthy or unhealthy system?

Now, what about a “**healthy ahupua’a**” – that is, not JUST the forest ecosystem, but also the entire ahupua’a. What do you think of when you think of a healthy ahupua’a?

Ok, let’s think about the same question but in reference to healthy human communities instead of forest ones.

What does **the term a “healthy human community”** mean to you?

What tells you or indicate to you that a community is healthy?

- Feel free to think about ‘**health**’ in the **broadest** sense of the word (i.e. physical, emotional, spiritual, cultural) including any type or dimension of health you want to consider.

So you said earlier that you (**DO or DO NOT**) see **your own well-being** as connected to the forests’ health.

<p>(If <b>DO</b> see well-being as connected above): Do you also feel that your community’s well being might be linked to the forests’ health? Can you share any <b>examples</b> that demonstrate that relationship? These can be personal experiences or accounts from others.</p>	<p>(If <b>DO NOT</b> see well-being connected above): Would that answer be any different for your community? That is, do you think that your community’s well being might be linked to the forests’ health?</p>
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Thanks. Let’s return to talking about the forests up mauka.

Can you describe any **changes in the health of forests up mauka** that you have noticed or heard about over time?

**[If respondent only notes changes for the worse, ask them if there are changes for the better, and vice versa]**

## Section 4- Management Opinions/Ideas for Improvement

Do you think that the management of the forests up mauka needs to be improved?

Are there **specific things** you think could be done to (better) **manage the forests'** ecological health? What are they and why do they matter? Feel free to recommend or think out loud about anything that's important.

**-- Start recording ideas for improved forest management on notecards --**

What about any other factors that might improve the way the forest is managed?

[If respondent hasn't mentioned people]: For instance, we could change the way we manage what people or groups of society can do in the forest. Is there anything you would recommend along these 'people' or human lines?

What about our **economy** as it relates to the forest -- are there things we should change or manage differently there?

Prompts: What about collection of plants, such as maile? Tourism? Hunting?

Ok, you've mentioned several issues that ought to be addressed to improve forest management. I've written them on these cards. Can you rank these management issues in importance?

[If not responding or not willing to rank]:  
Or elaborate on which you feel is most important?

## Section 5- Spatial Questions

Now, a disclaimer:

This series of questions is being asked in a number of places, and we're trying to standardize. So the FIRST question using this map may seem a bit strange. Just play along, if you will ... and the following map questions will hopefully make more sense, although they still might feel strange. Again, this is exploratory.

*Gesture towards the laminated map. Get out the green, purple and red fine tipped marker and the colored discs (100 green, 100 purple and 100 red discs), which will be allocated to shapes drawn by interviewees.*

Using the green marker, can you draw shapes around the areas that are most important to you economically? For this part, we'll look at both the coast and forest.

*[Introduce the green discs representing economic value. The number of discs that an interviewee allocates to an area will represent relative importance/value intensity for generating income.]*

If these 100 discs represent the monetary income that you have gotten from the ocean and forests on this map over your entire career, can you allocate them on the map **indicating how important each place on the map is or was to your livelihood?**

If part of your income doesn't come directly from the ecosystems on this map, can you indicate with the green disks the proportion of your total income that is from outside the study area?

[If have put a substantial portion of income on ecosystems:]

*Would restricting access to the resources in these locations (e.g. hunting, logging, collecting) change the monetary value that you derive from this area? [this question often doesn't make sense – especially not with landowners]*

What are the [main factors] that could most impact the things you value in the places that you've marked with the green disks? Is there anything that you think could or should be done to protect what you value in that place?

## Section 6- Place/Heritage

I'd like to talk with you now not just about forest ecosystems and how we use them, but also about some possible kinds of meaning or importance that might exist over and above uses that are economic or about specific resources.

Are there places **in the forest that are especially important to you**, but not because of anything physical you gain from them?

Prompt: That is, these places are valuable to you because they exist?

Can you describe why they are important?

Are there places that remind you of **important past events** that are important to you and your community?

Can you share with me some **flavor of what the experience of those places** and/or your attachment to them **feels like?**

Feel free to use **stories about your experiences** in these places if that helps. These can be things specific to you or your family or community. They can be recent or historical.

## Section 7- Identity

Identity is the ideas, **relationships, and sense of belonging** that **help shape who we are – who or where we belong to, the community we are a part of** and so on. In this sense, you could even say that **identity is tied to physical spaces and/or the things people do** within those places.

Are there places that are important to your sense of identity?  
I'd love to know more about how that works?

How would you describe, if at all, the nature of the link between places and people, as that link relates to identity?

## Section 8- Activity/Subsistence

Now, let's talk about the non-physical qualities or experiences derived from doing a physical activity involving the forests.

**[Repeat what they've said earlier (eg, "so you've said you hunt, fish, surf, hike, snorkel")]**

Thanks. Now, some of the tangible, concrete benefits from these activities include **food, income, and physical stamina.**

But there might be additional benefits over and above the physical things just mentioned.

**Are there other things that you think benefit you** or come to you as part of these physical activities you do in the forest or ocean, things that are important but not just about what you physically receive?

Prompt: For instance, perhaps you hunt pigs, which is important for feeding your family. Do you gain anything else from hunting pigs, in addition to the food?

OK, let's think about an imaginary situation. Suppose that you could chose to either collect maile for lei, or go to the store to buy a maile lei. What would you choose? What would you be missing? Or gaining?

Prompt: Describe to me how these two activities (collecting vs. buying) are different. Why does one way of doing things matter to you more than the other?

**[only ask this if really makes sense:**

Are the things you're describing about any sense of **well-being**?

And is that sense **gained or lost through doing** [the activities you described].]

## Section 9- Spiritual

Spiritual value of a place is difficult to define, but generally captures places that are **powerful because they inspire you to be aware of forces or entities larger than yourself.** This can be the basis for both negative and positive feelings including things like **awe, reverence, humility, and even fear.**

I know this is a personal question, but if you feel comfortable and would like to, can you speak about **experiences of this kind** that might be associated with this area? You can be

as **general or specific as you like** about both the **feeling** or experience and the **places** you associate those experiences with.

### **Section 10- Artistic/Ceremonial**

**[highly context specific: in some places things will not be considered art that would be considered art elsewhere]**

Some people associate artistic works with this place, as well as ceremonies or cultural celebrations.

Let's start with art. Has a place **ever provided you with ideas or images** that you think could or do **inspire art or some other visual or creative form**?

Now, what about ceremony? First, do you consider any ceremony to be associated with this place?

**[If yes,]** Does the surrounding environment contribute to, inspire or enable those ceremonies in any way?

### **Section 11 - Educational [ecosystem contribution to learning]**

Have you ever had the experience of a place(s)—or time in the forest or on the water — teaching you things?

What I mean here is the way we learn things outside of / not taught in classrooms.

... Some examples?

Are there specific places that come to mind that are important for [education, life-lessons, etc.]? Which places in particular? Be as detailed as possible in your descriptions.

### **Section 12- Intergenerational**

Are there particular experiences associated with the forests that you hope your kids and/or kids in your community will experience?

What are those experiences and what makes them important to future generations?

Were these things important to past generations, too?

Why are these things particularly important across generations?

### **Section 13- Mapping Non-Market Values**

These last few questions have explained what we could call “non-material” benefits from the ecosystems on this map. They are much harder usually to describe or pin down.

Even though this is true, **can you use the purple pen to outline** the areas that are most important to or most associated with some of the things you've described? I mean, again, important for reasons beyond economic or material ones.

[Introduce purple discs representing non-monetary value of ES.]

Can you distribute the 100 purple discs on the map based on places you value for these reasons – again, those places that are important for the reasons we've been talking about and so not necessarily related to or dependent on personal monetary gain? Can you locate and describe places that are of particular importance to you on this map? Why are they important?

**Additional possible questions, depending on fatigue and relevance:**

If **access** to the ecosystems of this area, say the ones you've said are important for reasons other than 'material' reasons, was **restricted**, what kind of impact would that have on you or your community? Would that **restricted access** make the area more or less valuable and if so why (or why not)? How much more – a little, some, a lot?

What kinds of things or **"main factors"** would **impact what you value** in the purple shapes?

Could any **actions be taken to protect** what you value within the purple shapes, actions that you didn't mention in the management section? What are they?

### **Section 15 - Threats**

Using the red pen, can you outline the areas **where the resources and benefits you get from the forests are most threatened**? Why is each area threatened? What are the main sources of those threats?

[Introduce red discs]

These represent threats to the benefits that you get from the ocean and forests that we've been talking about so far.

Can you allocate these 100 red discs on the map according to how threatened each place is?

Just to close, I want to make sure that I haven't missed any places that you value or that are particularly important to you?

What about other places that you haven't yet mentioned that are also threatened, again, for any reason that comes to mind?

### **Closing**

Thanks for your time.



That's all the questions I have for you. Do you have any questions for me?

We hope to create a resource from the information you've shared. If you have **additional ideas** of how to disseminate this information, please let me know.

I'll send you a copy of the confidential digitized version of your mapped responses so you can identify and I can correct any mistakes. I'll also be in touch with information about the products and results of this work.

In the meantime, if you are **interested in what we do with all that you've shared**, please check the website or call the number listed on the information sheet I gave to you at the beginning of the interview.

If you have released your name as connected with your answers, your name will be connected with them whenever possible.

***Thank you again.***