

PACIFIC ISLANDS MANAGED AND PROTECTED AREA COMMUNITY (PIMPAC) GUIDE FOR USING TRADITIONAL ECOLOGICAL KNOWLEDGE IN MANAGEMENT PLANNING

A. Introduction

Traditional ecological knowledge (TEK) is the knowledge a person or group of people have about the environment in an area based on years and generations of interaction and experience with that particular place. A fisherman who knows when a certain species migrates from one area to another, when it spawns, and where it feeds during different stages of the life cycle is using traditional ecological knowledge. A farmer who knows what moon is best for planting and which is best for harvesting is using traditional ecological knowledge. TEK incorporates the moral and spiritual in addition to cultural world views. This knowledge is deeply interwoven with cultural practice, expresses cultural values, and reflects years—often generations—of interaction between a place and the people who have lived there. It directs the order and pattern of life, the day's activities, the timing of those activities, relationships between people, common values held, and social rituals. TEK often results in unwritten, socially enforced rules about how to interact with the environment. For example, many Pacific Island communities have developed rules about when certain fish species are off-limits to fishing, and disregard for these rules is met with severe social consequences.

Recognizing the importance and wisdom of local practices through integrating TEK into management planning can improve resource management results. In addition, ongoing engagement with resource users and holders of TEK can strengthen management as they provide insight about changing conditions and how those changes compare to past events.

Integrating TEK and Western science for resources management has worked well where involved management authorities respect the knowledge built over time by resource users. Otherwise, a sense that management agencies are simply paying lip service to TEK damages possibilities of trusting and collaborative partnerships. For example, if a management agency seeks to collect TEK but does not utilize it when planning management strategies and actions—instead relying on information provided by Western science—then the local community may grow distrustful. Where the integration of TEK and Western science has worked (examples from around the world have been documented), scientists and resource users work together and learn from each other, testing assumptions and evaluating results.

In this chapter, we suggest a process to gather the TEK in an area and use that in developing management strategies and actions.

B. Benefits of Documenting Traditional Ecological Knowledge

In addition to providing information for resources management planning, documenting TEK contributes these benefits:

- **The preservation of culture.** Documenting TEK is putting into written form what comprises a specific group's culture—common behavior patterns, values, thought, history, beliefs, and world view.
- **The perpetuation of generational ecological knowledge.** TEK results from the knowledge built through years and generations of experience interacting with the environment. It results from lessons learned through daily experimentation and responding to changing conditions. Capturing this information has intrinsic and practical value to present-day and future generations. For example, elders may remember a time when a certain disease affected plants, how the community responded, and the results of various attempts. This benefit is especially important in the face of predicted environmental changes resulting from climate change. Elders may remember how a community responded to past natural disasters, what responses were beneficial, and what responses were not. Documenting TEK provides modern and future decision-makers with a foundation of experience and lessons learned upon which to build.
- **The provision of a more accurate baseline of resource conditions.** Without the benefit of historical resource information, the “sliding baseline syndrome” in which the current condition is believed to be the “normal” condition, may occur. TEK can provide historical information about resource health and conditions to develop a more accurate picture of changes to the resources over time. This more accurate baseline can be helpful in understanding threats, developing management strategies and monitoring plans, and assessing management effectiveness.
- **The engagement of experienced resource users in resources management.** Those people who utilize the natural resources targeted for management are a key stakeholder group, and they often have good information from their regular interaction with the resource. Without their support, resources management can be extremely difficult. Documenting their knowledge of the targeted resources engages them in the management process, which can lead to their participation in decision-making and, therefore, their support for management strategies. As mentioned in the introduction, engaging holders of TEK works well to build trust and support only when TEK is incorporated into management strategies.
- **The transmission of cultural knowledge to younger generations.** Many cultures incorporated the teaching of TEK into daily activities, as youth accompanied adults in resource gathering activities and were given specific responsibilities. In many areas, changes in educational systems, work patterns, and family structures have disrupted this transfer of TEK. As elders pass away, the knowledge they hold passes with them. Documenting TEK can assist efforts to ensure the continued transmission of knowledge from elders to youth.
- **The support for management from the broader community.** In many areas, members of the broader community have high regard for culture and tradition. Incorporating TEK into outreach materials can encourage those people to adhere to local best management

practices. For example, a Hawaiian fishing community adheres to seasonal fishing practices, restricting the take of certain species during spawning seasons. The community has created and distributed a calendar describing their fishing practices, thereby encouraging the broader public to understand, respect, and obey local practices that have led to a sustainable fishery.

C. Knowledge to Document for Resources Management

The breadth and depth of TEK in a community can be daunting. It is necessary to prioritize what you will document, primarily based on your target resources and how you anticipate that the TEK will be utilized. Some examples of TEK that other communities have documented for use in resources management includes the following:

- **Place names, people's names, and names of plants, animals, and geological features.** Names often demonstrate interconnection between land and sea, between places, between animals and plants and seasons, etc. Place names also reveal what can be found there, what has happened there, or how a place has been utilized. People's names can reveal family connections, generational ties, occupations or responsibilities of individuals, or events in the life of a community. Names of plants, animals, and features reveal connections, events, patterns, and life stages or histories. All types of names can reveal values and world views.
- **Where things have been located through time such as spawning aggregations, migration routes, and native species.** TEK can provide important historical biological information such as key habitats or resources and any shifts, threats to resources and how those have changed, historical areas of special concern or sensitivity, patterns, and resource changes. For example, farmers might share that a certain plant used to grow in an area, provide a time frame for the plant's demise, and discuss co-occurring changes. Also, TEK can reveal key sociocultural information such as areas of special significance to the local community. For example, a fisherman might describe an area that was used historically as a fish-schooling lookout that might be useful for current community-based enforcement activities.
- **Natural rhythms, cycles, and events that occur over time.** For example, TEK might disclose when different species of fish spawn, when birds come to roost, or when a plant flowers. These events may be marked according to time of day or moon phase or season. This type of TEK can be helpful in developing sound, biologically driven management strategies.
- **The way local people have used, allocated, and transferred natural resources over time.** This may include formal or informal rules and other social institutions where TEK about natural resources is embedded. Changes over time and any concurrent change to the condition of natural resources can help predict what may occur under different management regimes or with different management decisions.
- **The way local people have managed natural resources.** Many generationally existing communities have developed best management practices over time through trial and error. Incorporating those effective management practices into modern plans and strategies makes good sense.

- **The way local people perceive natural resources.** Understanding how cultural world view, values, and belief systems affect the local community's interaction with the environment can help to inform management strategies, outreach, and community engagement in management.
- **Comparisons between the past and present.** Such comparisons are useful to address shifting baseline syndrome. TEK can also be utilized to provide baseline data for future comparisons of ecosystem health and change.

D. Overview of the Process for Gathering Traditional Ecological Knowledge

Gathering TEK generally is accomplished in three phases: a preparatory phase, a gathering phase, and a utilization phase. TEK can be gathered from a variety of sources and with a variety of tools—from as simple as pen and paper to as technical as video recordings. We briefly outline the process below before providing more detail in the following pages.

1. *Define your goals.*

The first step in gathering and documenting TEK is to define your goals. What do you want to know, and why do you want to know it? Consider how you plan to utilize the information. Consider your audience and the different methods you can use to communicate what you learn. Possible outputs are...

- Use of/incorporation of knowledge into management actions: management plans, rules, management activities
- Curriculum/lesson plans (consider age groups)
- Outreach materials: Brochures, posters, public service announcements
- Cultural preservation: Cultural displays, community/historical archives, TV/radio/internet
- Personal response

2. *Determine methods you will use.*

Based on your goals and how you plan to use the information you gather, determine which methods you want to use to gather TEK. Options are as follows:

- a. **One-on-one interview:** You can sit down and talk with a person, have them show you areas on a map, take them to the place you are talking about and have them sit or walk while they talk, have them demonstrate a practice, or have them show the object they are discussing.
- b. **Group interview:** You can use a panel discussion format, a focus group format, have a group show you areas on a map, take them to the place you are talking about and have them walk while they talk, have them demonstrate a practice, or have them show the object they are discussing.
- c. **Live instruction** in which a person or small group shares the steps used to complete a particular practice or task.

- d. Straight recording/documenting of an event or activity that is occurring as you record it.

3. *Determine from whom or what you will gather the information.*

Based on what you want to know and what methods you will use to record the information, determine from whom or what you will gather the information. Include historical written research from books, previous research, letters, and journals as well as people. People of different genders, different ages, and different social positions will know different things about the environment.

4. *Determine what documentation tools you will use.*

Based on the methods, the wishes of who you will record, and how you want to use the information, determine what documentation tool(s) you will use. Options are as follows:

- a. Pen and paper
- b. Audio recording
- c. Photography
- d. Video recording

Once you have a good idea of what you want to document and how you will document it, you will follow the following steps, which are described in more detail in later sections:

1. Gather background information.
2. Develop or secure a waiver and release form.
3. Gather your TEK documentation team.
4. Conduct a pre-visit with those who will share TEK with you.
5. Develop a recording plan.
6. Gather and test all the equipment you will need.
7. Prepare for the interview(s).
8. Conduct the interview(s).
9. Record TEK from interviewees.
10. Transcribe interviews, get approval for the use of content, and save information.
11. Communicate what was learned in appropriate ways to appropriate audiences.
12. Use what was learned in natural resources management.

We recommend that you review this entire chapter, especially section F titled “Gathering Traditional Ecological Knowledge,” before proceeding.

E. Preparing to Gather Traditional Ecological Knowledge

The preparation phase of a TEK documentation process includes several steps, which are detailed below.

1. *Gather background information.*

Be an informed documenter. Researching background information as a first step will help you determine what TEK to document, identify who may hold the knowledge, and help you start to develop questions you want to ask. Review any of the following that you can find that is pertinent to your TEK project:

- Published material about the subject
- Historical documents
- Recordings
- Relevant stories, chants, songs, and so on
- Place names
- Demographic information
- Photographs, old and new
- Maps, old and new

You can find this information from national and local government agencies, nongovernmental organizations, academic and research institutions, museums, local historical organizations, and long-time members of the community.

As you gather background information, keep detailed records. Use a notebook or computer to record the information you learn; where you found the information; the title of a published work along with its author or editor, publisher, publication date, and page number; and the name of anyone who assisted you with finding the information.

2. *Complete “Worksheet 1: Preparing to Gather Traditional Ecological Knowledge.”* The worksheet on pp. 9-12, which follows this section, will help you narrow the focus of your TEK documentation effort and organize your approach.
3. *Complete “Worksheet 2: Assignments for Documenting Traditional Ecological Knowledge.”* This worksheet on p. 13, which follows Worksheet 1 after this section, will help you to organize who will be responsible for gathering TEK from specific knowledgeable community members, along with the method and tools they will use.
4. *Develop or secure a waiver and release form.* Ownership of intellectual property rights—especially the use of indigenous people’s intellectual property for profit by businesses and other institutions—has been the subject of controversy and a great deal of legal activity. Holders of TEK should maintain rights to their intellectual property, and the knowledge they share should not be used without their consent. We strongly recommend that you review “Traditional Knowledge and Intellectual Property: A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting Their Intellectual Property and Maintaining Biological Diversity” by Stephen A. Hansen and Justin W. VanFleet of the American Association for the Advancement of Science (AAAS) Science and Human Rights Program

(July 2003). There is a particularly pertinent section titled “Suggestions for Documenting TK.” You can find the handbook online at <http://shr.aaas.org/tek/handbook/handbook.pdf>.

A waiver is a document by which the interviewee agrees to be recorded (signed before taping). A release is signed *after reviewing the results of the interview* so that nothing is used without permission. It is common practice to include the waiver and release on one form, with a letter stating (1) how the material will be used, (2) that material from the interview will be sent to the interviewee for his/her review, and (3) that they have 30 days to review, edit, and/or pull their permission to utilize it.

The release form can include the following choices for how the participants wish the information to be shared:

- For use by family only
- People whose family come from my community
- Residents of my communities
- Local educational programs
- Other educational programs
- Schools
- General public
- Public library
- Internet
- Create curriculum from this material
- Create films
- Other uses

An example form is provided at the end of this chapter (p. 26).

5. *Gather your TEK documentation team.*

While you may be able to document TEK on your own, it is advantageous to include other people on your team so that different responsibilities are managed by different people. Here are possible team member roles for you to consider including:

- Interviewer: Friendly, clear voice and speech, good listener, possibly knowledgeable about the area
- Videographer: Monitors sound and operates video camera
- Photographer: Takes photos of the scene and the speaker(s)
- Sound tech: Records the audio
- Note taker: Records the interview on paper
- Technical assistant: Helps with set-up and provides general assistance

6. *Conduct a pre-visit with those who will share TEK with you.*

Each member of the TEK team who is responsible for speaking with those who hold TEK (“documenter”) should conduct a pre-visit with those with whom they will speak

(“interviewee”). The purpose of the pre-visit is for the documenter and the interviewee to become comfortable with one another.

- Bring a gift, if culturally appropriate. An old photograph, map, newspaper article, or other document that you will leave with the interviewee can help to spark conversation.
- Talk informally.
- Explain the goals of documentation—the type of information you will be seeking, why, and how the information will be used.
- Explain the documentation process, and determine together how the interview will be recorded.
- Review the waiver and release form so the interviewee can sign it. Make clear that no one will see any information from the documentation effort (other than those who record it and the editor) until the interviewee signs the release form.
- Review a list of possible interview questions.
- Set up the time and place for the formal interview.
 - Interviews generally take an hour to an hour and a half, but allow for another 30 minutes or so for visiting and to set up and take down any equipment.
 - Choose a place where you can avoid distracting background noise and interruptions. It is best for the area to provide a pleasant background and comfortable conditions.
- Describe who is part of your TEK documentation team.
- Because you will give back a copy of the information you gather from the interviewee, find out what method of transmission the interviewee prefers, based upon the tools you will use to document the TEK. For example, if you are conducting a one-on-one interview using pen and paper along with an audio recorder, would the interviewee like a copy of the notes, the transcript, and/or the audio recording (and if so, in what format)?
- Encourage the interviewee to ask questions.
- Thank the interviewee.

7. *Develop a recording plan.*

If at all possible, visit the place where you will meet with the interviewee to plan how the documentation effort will proceed. Your plan will be determined largely by the methods and tools you will be using. For example, if you will be photographing the interviewee as s/he demonstrates a practice, then you will want to think about where the photographing will take place, the lighting you will need, and the angles you will want to utilize. If you are audio recording an interview with the person at an outdoor location, you will want to look for a quiet place free of background noise and distractions. If you are video recording a group interview at a significant site, you will want to look for a pleasant backdrop and a comfortable setting that is free of bright, harsh lighting such as that reflecting off of the ocean.

Before the interview, outline the general questions you will ask. Possibilities include stories, observations, descriptions, and so on. Develop your guiding questions, but plan to follow the speaker's train of thought.

Outline the general visual or auditory elements you want to include.

Review these questions when developing your plan to ensure that you have weighed ethical considerations:

- When is it OK to take a picture, and when is it not OK?
- How does taking the photograph affect the person who is reflecting light onto the film?
- When is it OK for a photography to take a photograph without the subject's knowledge?
- How do you go about making the photograph best represents the truth of the moment?
- How do you know that what you are seeing is truth, that you are not being manipulated or manipulating?

8. *Gather and test all the equipment you will need.* Depending on your method and tools, this may include the following:

- Pen and paper: Notebook sturdy enough to hold even in the wind, several functional pens
- Audio recording: Recorder, charged batteries, extra batteries, microphone, pen and notebook to record visual observations
- Photography: Camera, charged batteries, extra batteries, pen and notebook or audio recorder so you can record information about what you are photographing
- Watch
- Plastic Ziploc bags for possible rain
- Rags or towels to protect equipment from moisture
- Umbrellas for rain or sun

Worksheet 1: Preparing to Gather Traditional Ecological Knowledge

1. In the left-hand column of the table below, list the natural resource targets identified during Session 4.
2. For each resource target, write what information the planning team would like to know about the traditional knowledge of that resource target. For example, “How did our ancestors avoid taking too many of this fish?” or “What were the traditional names for this area, and what do those names tell us about what used to be here?” Some other possible broad questions are as follows:
 - How abundant was a particular resource in the past? How has the condition of that resource changed over time?
 - How did our ancestors gather those resources? What tools did they use? How did they know the right time to gather? How much did they gather, and why that much? What rules or parameters did they follow?
 - How important was this resource to the community in the past? Was there ever a time when the resource was scarce? How did the community adapt?
3. For each resource, list who has traditional knowledge about it. Include people (men, women, old, young) and institutions (local governmental agencies, schools, etc.). TEK is not homogenous within a community, so different people of different ages in different positions will know different things about the environment.
4. For each resource target, list what you think is the best method to gather TEK from the people and/or institutions you have identified that have the knowledge. For example, perhaps you will take two elder brothers to the area where they grew up hunting and have them show you the area while they talk about it. Perhaps you will observe an expert in a particular fishing practice demonstrate that practice. Or perhaps you will visit someone at their home and interview them. The chart below can help you determine the best methods:

Documents/Institutions	Individuals	Groups
<ul style="list-style-type: none"> • Books (old and new) in libraries and museums • Journals about the area or the history of the area • Research papers (master’s theses, doctoral dissertations, anthropological descriptions or compilations) • Social or biological scientific research (universities, management agencies, commercial entities, nonprofit organizations) • Newspaper and magazine articles • Historical records (Biological inventories, anthropological descriptions or compilations, catch records, old newspaper articles, old maps, old legal records, etc.) • Maps • Legal proceedings • Completed interviews that have been transcribed, recorded, and/or filmed 	<ul style="list-style-type: none"> • One-on-one interview: Sit down and talk. • Take them to the place they are discussing and do a one-on-one interview in that setting. • Take them to the place they are discussing and have them show you around while they discuss the place. • Have them demonstrate a practice. • Have them show the object(s) they are discussing. • Have them point out areas on a map. 	<ul style="list-style-type: none"> • Panel discussion: Sit and each take a turn speaking. • Focus group: Sit and discuss the questions together. • Take the group to the place they are discussing and have them sit and talk together in that setting. • Take the group to the place they are discussing and have them show you around while they discuss the place. • Have the group demonstrate a practice together. • Have the group show the object(s) they are discussing. • Have them point out areas on a map.

5. For each method you've decided upon for gathering TEK (a group interview of community elders, for example), determine the best tool to use to gather that information. Tools that can be used to gather TEK are as follows:
 - a. Pencil and paper for writing notes or sketching
 - b. Maps for identifying places and helping to provide geographical context for the information shared
 - c. Audio recording to record interviews, stories, histories, and/or instructions
 - d. Still photography to show areas, practices, and/or people
 - e. Video recording to capture both the sound and visual of interviews, instructions, places, and/or practices.

Different tools work best for different methods. For a one-on-one interview of an elder, you will need to use a pen and paper to take notes, and you can also use a voice recorder or video recorder. For a group interview of community elders, it is helpful to use a video recorder. If a practitioner is demonstrating a particular traditional practice, you will want to use a camera or video recorder to document each step in the process.

Resource Targets (Session 4)	What Do We Want to Know / Questions (Place names, locations, cycles, uses of, management practices, gathering practices, importance of, comparison to past, etc.)	Who Has Knowledge (People and institutions)	Techniques for Gathering (Use the table "Techniques for Gathering TEK" below.)	Tool(s) for Gathering (Written documents, pen and paper, camera, voice recorder, video camera.)

Worksheet 2: Assignments for Documenting Traditional Ecological Knowledge

1. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
2. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
3. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
4. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
5. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
6. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
7. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).
8. _____ (name of person) will gather TEK about _____ (resource target) from _____ (person or institution) using _____ (technique such as panel discussion) and _____ (tool such as voice recorder).

F. Gathering Traditional Ecological Knowledge

You have a plan, the people who will help, and the equipment. You have met with the interviewee(s) and scoped the site. This section walks you through the steps for the actual documentation of the TEK.

1. *Prepare for the interview(s)*. General procedures and tips to ensure successful interviews follow:

- Practice the skills needed to interview well: Questioning, observing, listening, focusing and guiding, recording, establishing rapport.
- Before going to the site, check all equipment to see that it is working. Test all equipment, and play it back to ensure that it works.
- Collect maps, photographs, etc., to take with you. These will help to spur memories. You will also be able to use these to write notes—place names, stories about particular places, numbers, and other facts and details.

2. *Conduct the interview(s)*. General guidelines are provided directly below, followed by specific tips for the different methods and different tools you may use.

- Take a gift, if appropriate.
- Avoid calling attention to your arrival through the use of a fancy vehicle or nonconforming clothing, etc.
- Arrive to the agreed-upon location in a timely manner. Turn off cell phones and other potential noise-making devices. (Ask others to do the same.)
- Once on-site, perform a final quick equipment test. Play back the test (visual and audio) to ensure you are getting the photos and audio without distraction (such as waves breaking so loud that it interferes with your ability to hear the speakers).
- If the interviewee has not done so already, ask them to sign the waiver form.
- Have the note-taker mark down the time when the recording begins, the time at which new topics were introduced, and the time the recording ends. These notes are so helpful when it is time to transcribe, edit etc., saving searching back and forth through hours of footage aimlessly.
- Before you begin, remind people why you are interviewing them.
- Remind interviewees that you will bring the transcript of the interview to them first before sharing it with others.
- Begin with an easy opening that sets the interviewees at ease. Asking for a story is often a good opener, as is asking how someone does something.
- Use the words and names the interviewee uses during the rest of the conversation.
- Good interviewers know that sometimes important information comes from what at first seems to be a tangent. Good interviewers also know how and when to interject questions to weave things back together. Use your planned interview questions as a guide, but don't feel that you have to stick to their order or wording.
- Ask follow-up questions.
- Avoid leading questions, and avoid “putting words” in the interviewees’ mouth.

- Give the interviewees time to answer questions completely. Ask for clarification if you do not understand something, or ask the interviewees to repeat what was said. Ask for details.
- Avoid turning the focus to yourself.
- Avoid lecturing or arguing with an interviewee.
- Make eye contact. Nod, smile and look interested.
- Ask interviewees where they got their knowledge.
- Ask who else to talk with, who else has expertise in the area of your interest.
- Ask if you can call the interviewees if you need clarification.
- Remind interviewees that you will bring the transcript to them first, and let them know when they can expect to see the transcript from you. (Remember that it takes approximately 4 hours to transcribe 1 hour of interview.)
- Leave some written information about the project, along with your contact information.
- Thank the interviewees and any support personnel they had along.
- Gather up all of your equipment, leave nothing behind, and leave the place at least as clean as you found it.
- Get to a private space as soon as possible (within minutes of leaving), and write down everything that comes to mind about the interview—major themes, specific quotes, and so on.

Tips for one-on-one interviews

Use a one-on-one interview to document knowledge that an individual holds. One-on-one interviews tend to be more personal, more intimate, and more detailed than other types of interviews.

One-on-one interviews can be structured, with a list of general questions you are trying to have answered, or unstructured, which is more like a free-flowing conversation. You will probably want some general questions to be answered in order to meet your goal.

One-on-one interviews can be stationary or mobile. For example, you may want to hold an interview at a location where a meaningful event took place or where the interviewee engages(ed) in the subject you are discussing (aka. walkabout interview). Walk-about interviews are generally more logistically and technologically challenging.

Tips for group interviews

Use group interviews or focus groups when you want to document more people's knowledge in less time or when your interviewees shared experiences or practices that you are interested in.

Group interviews are useful because people jog each other's memories and build upon each other's thoughts. Participants can also help correct each other if factual information is incorrect.

In order to capture as many comments as possible, have one or two note-takers stationed in different parts of the room.

The challenge with group interviews, in addition to the technology, is that a small number of participants may dominate the discussion.

- Invite around 5 to 8 people to participate in a session to last for about an hour to an hour and a half.
- Ahead of time, prepare an agenda including a list of the top-level issues to be tackled, if appropriate.
- If appropriate, ask the participants to introduce themselves. (You usually will want to bring together people who are already familiar with one another.)
- Step in to keep the session on track. Disagreements and debates are useful when they lead to new and interesting ideas, but have to be managed carefully.
 - If one participant tries to dominate the session, invite each person to speak in turn.
 - Respect someone's right to be quiet, but do give them a chance to share their ideas one-to-one (during a break or a follow-up conversation).

Tips for instructional interviews

Use instructional interviews when you want to document the different steps of in a particular practice. Record every step of a process that you are documenting. If you are using photography or video, be sure to also take notes and record audio so that you can use the interviewees' own explanations and phrases to describe the practice.

When documenting practices, include HOW and WHY the practice is used and the spiritual and cultural ties associated with it.

Tips for using pen and paper

Note: It's best to have a note-taker no matter what primary format you choose, as pen-and-paper documentation is the most reliable.

- Instead of writing questions in order on a piece of paper, write them on sticky notes so that you can move them to fit the order of the actual interview.
- Develop your own note-taking system.
- Jot a question mark in the margin if you need to clarify a point before the interview ends.
- Always put quotation marks around direct quotes.
- Avoid fixating on quotes.
- Gather basic information in one place, or circle it. For example, in your notebook, gather all of the basic information—for instance, correct spelling of names,

hometowns, occupations, date of birth—in one place, or circle it. Often, starting an interview with these background questions is a good icebreaker, and a way to ensure you have this information covered.

- Listen. Listen. Listen. Don't write down everything you hear. Distinguish between information that can be paraphrased—the who, what and where—and meaty quotes that explain the why and how.
- Details, facts, or explanations that expand or explain the main points that are mentioned. Don't forget examples.

Tips for using audio recorders

- Use audio recording to capture the sounds of a place or person, accurate quotes and phrases and explanations, an entire interview, and the practices themselves such as chants.
- Sound can be a very powerful element in outreach and educational materials.
- Read the manual and be familiar with all of the functions of your audio recorder. Experiment and practice before going into an interview.
- Good audio recordings can be done really easily by just one person. The most important thing to consider is sound quality.
- Take notes or have a note-taker take notes to supplement the technology.

Tips for using still photography

- Use still photography to capture visual images of a place, person, or practice.
- Images are extremely useful when communicating what you have learned to others. Not only do they add interest, but they are also more objectively accurate than an interviewer's description.
- Read the manual and be familiar with all of the functions of your camera. Experiment and practice before going into an interview.
- Ask permission before taking people's photos.
- Hold the camera steady with your body.
- Lighting can make or break a photo—always be aware of lighting. With digital cameras, take test shots to be sure the angle is right.
- Before bringing the camera before your eye, visualize what you want to see or show. Do you want the whole scene or a detail? How much of the scene do you want to show?
- Usually, hold the camera horizontally for a horizontal subject, and hold it vertically for a vertical subject.
- Examine the edges of the frame: Don't visually cut someone off at the joint. Check the background for distractions/clutter.
- Use lighting and lines to help direct the eye.
- If shooting action, often shoot off-center and leave space where the action is headed. For example, if shooting someone throwing net, the empty space would be where the net is headed.

- Conventional placement for horizon line when taking a scenery photo is in the upper third of the photo.
- Shoot using different ranges and angles, levels... panoramas, head shots, actions shots, details.
- Don't always center the subject. Think about the arrangement of all of the elements in the photograph.

3. *Transcribe interviews, get approval for use of content, and save information.*

- Save, copy, and store the recorded information the very day you record it. Create at least one backup copy as well.
- Label all notes, audio files, photo files, etc., with (1) the date of the interview, (2) the time of the interview, (3) your name, (4) the interviewees' name, and (5) the location of the interview.
- Transcribe, proofread, and format: Be careful what you include in transcripts; no need to air dirty laundry.
- Provide the transcript and copy of digital recording to the interviewee(s) for edits/corrections (ideally within two weeks of the interview).
 - Would they like to change or edit it?
 - Do they feel it is a correct representation of their story?
- Review the release and allow them to make a final decision on what and how they choose to release. It's very important that the release form be signed at this stage.
- Complete final edits to the transcript and the digital format
- Provide an updated transcript and a final copy of the digital recording (in a format the interviewee can use) to the interviewee.
- Save, copy, and store the information. Create at least one backup copy as well.
- It's best to store hard copies in air-tight containers in a secure environment with low humidity. Backup copies should be stored at a different location.

G. Utilizing Traditional Ecological Knowledge

1. *Communicate what was learned in appropriate ways to appropriate audiences.*

This vitally important information does not just need to sit on a shelf. It is critical that the information be shared for better decision-making and planning. Make your communications interesting, understandable, convincing, and timely. Include dialogue, quotes from the people you have spoken with, photos or illustrations, and audio recordings to enhance your message.

- Who should receive the information?
 - People who have participated in the project
 - Community members who did not directly participate
 - Other communities
 - Management staff
 - Donors
 - General public

- Research organizations
- What response do you want from your audience?
- How can you frame your message to elicit that response?
- How will you reach your audience? (Community meeting, TV/radio, internet, etc.)
- What format best suits your audience, your message, and the way you will reach your audience?

2. *Use what was learned in natural resources management.*

In addition to sharing the information so that it is not lost, TEK often can be used to enhance the management of natural resources. It can be incorporated into or inform the following:

- Management planning
- Management regulations, including zoning
- Community-based, culturally enforced behavioral “norms” or accepted practices
- Environmental assessment, including baseline assessments, environmental impact assessments, and ongoing monitoring and evaluation
- Disaster and resiliency planning
- Mapping
- Outreach materials
- Educational programs

If you are in the process of developing a management plan for natural resources, use “Worksheet 3: Applying Traditional Ecological Knowledge When Developing a Natural Resources Management Plan” on pp. 20-21 to help you apply TEK to the process of management planning.

If you already have a management plan, use “Worksheet 4: Applying Traditional Ecological Knowledge to Revise a Natural Resources Management Plan” on pp. 22-23 to help you determine how you can use the TEK you have documented to enhance a management of natural resources in an area.

Worksheet 3: Applying Traditional Ecological Knowledge When Developing a Natural Resources Management Plan

1. Review the TEK you documented. As you review, tease out the information that can fit into the table below.
2. Write any values or beliefs that were identified—that the community shares the value that fishermen should take what they need, not what they are able, for example, or that a particular area is associated with a spiritual story and should be treated as sacred.
3. Write any mention of past conditions associated with the natural resource targets—that more native plants existed in an area in the past, for example, or that a hurricane wiped out a section of mangrove or coral reef.
4. Write the identification of different types of areas—spawning areas, areas the elderly are able to access for harvesting, areas that are important hunting grounds for a particular family, and so on.
5. Write any threats to resources that were mentioned—invasive and introduced species, weak enforcement, harvesting methods that damage the environment or that are too effective, for example.
6. Write any information that is associated with particular resources—the spawning season for a particular species of fish, habitat needed for different parts of an animal’s life cycle, seasonal patterns, and so on.
7. Write any practices or actions that were identified—for example, only harvesting a particular species during a particular season, leaving alone fish or other animals of a certain size, a practice that involved the entire community, and so on.
8. Compare the lessons learned from management to the current management plan for the area, if one exists. Where can TEK be applied—to rules or regulations, outreach activities, enforcement plans, evaluation plans, and so on. If you are still developing the management plan, TEK can help you to create an accurate map of the area; inform your site description; identify threats to resource targets; inform your objectives; and provide ideas for management actions, zoning, and regulations based on traditional use, knowledge, and practice.

Worksheet 4: Applying Traditional Ecological Knowledge to Revise a Natural Resources Management Plan

1. Review the TEK you documented. As you review, tease out the information that can fit into the table below.
2. In the table below, write the management objectives and activities from the existing management plan.
3. In the middle column, record any TEK that applies to the existing management objective and activity you wrote in the left-hand column.
4. In the right-hand column, write a revised management objective or activity that incorporates the documented TEK.
5. Once the worksheet is completed, review the documented TEK for any new management objectives or activities that should be incorporated into the management plan in order to include TEK. Write those below:
 - a.
 - b.
 - c.
 - d.
 - e.
 - f.
 - g.
 - h.
 - i.
 - j.
 - k.
 - l.
 - m.
 - n.
 - o.
 - p.

H. Resources

- Alaska Native Knowledge Network: www.ankn.auf.edu
- Fishers' Knowledge in Fisheries Science and Management (pdf):
- The Smithsonian Folklife and Oral History Interviewing Guide (pdf):
<http://www.folklife.si.edu/resources/pdf/interviewingguide.pdf>
- *Traditional Ecological Knowledge and Natural Resource Management* by Charles R. Menzies
- Traditional Knowledge and Intellectual Property (pdf):
<http://shr.aaas.org/tek/handbook/handbook.pdf>
- The United Nations Educational, Scientific and Cultural Organization's (UNESCO) Local and Indigenous Knowledge Systems (LINKS)
- Voices from the Fishery Handbook (pdf):
http://www.st.nmfs.noaa.gov/voicesfromthefisheries/documents/VFF_handbook_final.pdf

INTERVIEW CONSENT AND RELEASE FORM

Project name: _____

Date: _____ Interviewer: _____

Full name of person interviewed: _____

Address of interviewee: _____

Best contact number(s) and/or addresses: _____

By signing this form, I give my permission for any written notes, audio files, photo files, and/or video files made during this project to be used by [agency/organization]. I give permission for the following (check all that apply), expect for any restrictions (noted below):

May be used for educational and research purposes at the above institution

May include my name

May be included in a school publication or exhibit

May be included in another educational, nonprofit publication or exhibit

May be used but DO NOT include my name

May be deposited in a local, state or regional archive

Other (explain)

Restriction description:

By giving your permission, you **do not** give up any copyright or intellectual property rights that you may hold. However, it is important to understand that once knowledge is released to the public, you/your family are no longer able to pursue intellectual property protections.

Name (please print): _____

Signature: _____ Date: _____

Researcher's signature: _____ Date: _____