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10:00 a.m.
Stuart Harris/Barbara Harper

Merv Tano: . . . so with that I'll leave this to you Barbara and you can take over.

Barbara Harper: Okay, Stuart, are you there?

Stuart Harris: I'm here.

Barbara Harper: Okay, and it sounds good, so it's all yours. Just tell me when to change the slide.

Stuart Harris: Okay.

Barbara Harper: And then I have the microphone so afterwards and people have questions, we'll carry it around to people so that you can hear it.

Stuart Harris: Okay. Good morning, everybody. I appreciate you taking the time to listen to me and take a look at these slides on assessing cultural risk. Like Barbara said, if you do have questions, please make sure that you ask them at the end. I did give a lecture at a waste management conference and at the end of the lecture there was just silence. So if I hear silence I'll hang up. But I'm just kidding, okay? Okay.

So I guess from that we'll go on. Next slide. We're going to talk today about there major topics, definition of, exposure, making sense of, measuring it, displaying it, receptors and systems, some spatial and temporal aspects and finally conclusions. Next slide.

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My name is Stuart Harris. I'm a risk assessor and a staff scientist at the Confederated Tribes of Umatilla Indian Reservation located in Northeastern Oregon. We're at the center of a very large complicated Indo-European infrastructure system of gas pipelines, freeways, railways and barges, and we have to deal with a great many different types of environmental impact. And my work has stemmed from talking to the elders about how their culture and lifestyle has been impacted from not only pollution but from development. Next slide.

Risk assessments. I started working on them 7 or 8 years ago, are slowly becoming easier to use. They're slowly becoming more user friendly in terms of the fact that people are given the chance to you know, governments can be cooperating agencies or people's considerations are actually being implemented. As a member of the sovereign nations we have a distinct advantage and opportunity of being able to contact federal government agencies before a decision is made and to talk to them about our rights, our rights that are guaranteed by treaty law. But there are a lot of problems associated with the current risk assessment methodology and these include like the second paragraph here, lack of integration, deficiencies related to not addressing our quality of life. The fact that man is an inseparable part of the ecology and the fact that we have unique and very different exposure patterns. Next slide.

You have to start when you deal with risk assessment in general with a set of core values that you're willing not to back away from. This here is kind of a short list of the things that Dr. Harper and I, we hold up for everybody to look at because it's good to tell

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everybody this is where we're coming from. We believe in these things, we believe in them 100 percent because you have to. It's very important that you understand that the health of the people through time is probably the most important thing because the knowledge base that the elders have is only there for the time that they're on this earth. And they have to transfer that to the young people. Next slide.

This is a neat example of how you can take a set of factors that is typically described contamination levels, extent, physical stuff and how you can translate them into more user friendly terminology. Things that make sense towards building your understanding and your knowledge about how to assess cultural risk. You have to grasp the fact that there are things such as community health. There are things such as the integrity of giant chunks of ecosystems. Things that we call subunits of ecosystems and these are things that are within like watersheds. You may have a subwatershed impact. Next slide.

This slide here a fairly good definition of what cultural risk is. And the bottom line on this slide is to let you understand that the culture that has been in this Columbia River basin and in other parts across America and in other parts across the world where people have been living with the ecology, they have been modified by this very food, the native foods that they eat and work with. Very important to understand that. That's real. And this thing that happens, this relationship that happens between people and the ecology is something that we need to bring forth in our understanding of risk and risk assessment and risk management so that these things can be taken accounted of

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to make sure that these watersheds are better protected and these people are given the chance to live their lives and move on. Next slide.

We oftentimes, Dr. Harper and I, will oftentimes go about lecturing, talking about risk, risk assessment, risk management, exposure parameters, cultural risks, and we oftentimes get a very basic set of responses. These next couple of slides are some typical misperceptions about what cultural risk is. When you go into any room and you start talking about cultural risk, you'll probably hear about these kind of things in your work from now on. You're going to hear things like well, probably of symptoms, you know given a particular exposure level, these things are public health type measures. Okay, well really, what about the people? Okay. When you're talking about risk management oftentimes people will say well, you know it's like you need to talk to us maybe tomorrow and we'll consider your request to put cultural risk in later. It's a waiting factor. Well these are the things that we come across a lot. Next slide.

The top one, the top sentence there, or whatever paragraph. We get this from people who are oftentimes that there are Indians in an area or culturally diverse groups in an area. They say it's a communication problem and you know, jeez, if we can help them avoid the exposure then we can avoid cultural risk. And they like to think this way without actually thinking any deeper than that. The fact that sometimes you can't avoid exposing people because of their life that has been around for a long time. The middle one is one that we ran across at the Hanford site where they figured that well what if we just said it's the typical suburban exposure patterns and fish. That's my fish. Oh and

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then we can have some ceremonies. A pow wow. Put a pow wow in there. This doesn't go far enough towards assessing what cultural risk really is and it's totally unacceptable and you have to be able to stand up and say our lives are much more than eating some more fish or eating some more types of food such as the fruits of cactus or the way that we grow our own native corn or things like that. And the bottom one is one that we get when we're talking with people who really have no clue. We hear things like, well why don't you go back living like an Indian. It's like why? When metal first came across America, we took it and we used it for knives and arrows and awls. We incorporated the technology into our culture but it didn't make us throw away our culture. I heard one of my elders say, well why should I go back to the bow and arrow when I've been exposed to rifles. I mean I can still hunt with a bow and arrow, but that doesn't mean that I have to go and become a neopaleolithic person. Next slide.

I talk about our religion a lot and I talk about a thing we call comanuit(?). Comanuit is the law. The law of the land. It's the law that's been handed down for thousands of years from elders to grandchildren. From parents to sons and daughters. And they talk about the things in the environment that come and go, things that we need to know about how to survive, how to get sinew off the back of a deer and use it properly so it doesn't break. How to crack the bones, boil them up and use the fat and how to store the fat so it doesn't go rancid. We talk about these things and there are things that you can do, things you can't do. And I was given an assignment to think about comparing our religion with Indo-European science. This is during the early phases of the controversy with the ancient one who I may remind you is still above the ground. And I

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realize that the science that our people have done throughout the years followed the same path as Indo-European science did, except for I don't think that we tied fish to people's feet to cure headaches, things like that. Next slide.

Our behavior, the way that we behave within our eco-cultural landscape is a conscious response to the environment. They knew what was going to happen, the elders did. They knew what was going to happen. I asked one elder. I said, "When you guys were going down to the river and fishing, how did you know that the fish were going to be there?" And they said, "Well we've been observing when the fish came, about what time of year and that's why our language is oriented towards the coming of things because it's a very descriptive language. The language tells you when things are going to be happening. And when we go to church, they talk about the changes in the environment according to the month, the Indian month that it is. And it doesn't necessarily correspond to whatever 28 or 30 days or whatever it is." And I said, "Well what if you got down to the river and the fish weren't there yet, what would you do?" He goes, "Well we'd probably you know consume what was there." And if it was on the Columbia River that would probably be eels and you'd be eating eels for a couple of days. But this is the realization you know, upon my part that these people understood something about the ecology that was much more in-depth and much more regular and systematic than I ever thought. All the textbooks that I read about ecology or biology had no clue to what these people knew. Next slide.

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The application of this science has indeed been codified into law. It's called the temanoen(?) here. In other tribes it's called something else, but it's a law. It's a law that we have to obey because if we don't, then the next year there may not be food or medicine or maybe you might poison yourself, maybe your family because you collected at the wrong time or the wrong plant. This has happened. People have come and gone because they didn't follow the law. Whole groups of people have perished because they gathered the wrong food, or the wrong type of food at the wrong time. So it's very important to understand that this knowledge is ancient and the knowledge has gone through all of the phases of testing and very careful thought and analysis that Indo-European science has done. And it has become part of our life. It has become our religion. Next slide.

The Native American Subsistence Scenario. This scenario was built in response to a project at the Hanford site called the Columbia River Comprehensive Impact Assessment. This Impact Assessment was indeed a groundbreaking attempt to try to quantify natural resources that might be impacted along the river and how to evaluate those, the quality of those resources in terms of cleanup. How to cleanup a nuclear and chemically contaminated area and how to do it in such a way that everybody is involved and that we achieve some sort of level of communications where everybody benefits. Well everybody has benefited from the building of this assessment. But one of the end results was, was that I had to go about my people and talk to them hours on end to get information about exposure. And this exposure pattern numbers, links of time, and subsegments of our population was utilized in calculations of risk. And the risk among

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segments of the Columbia River near the Hanford site was calculated and it was shown that indeed we do have levels of exposure that are quite high. Two to a hundred times greater than the average suburban person. This is a significant fact. Additionally we found that the pattern of exposure is quite different also. The levels of risk I might add have been found to be alarming. You can find this report at DOE.gov I think there's a DOE person there that can tell you where it's at.

How to build it. How do you build your own scenario. You travel people who are addressing impacts out there, need to know how to do this. And so what you do is that you start with the understanding that your elders are the key to this and that you have to go out and establish who you are, where your family, who your family is, and that you're not going to sell out to people because on my reservation, I don't know about anybody else, but on my reservation we've had anthropologists come and go, you know, seeking information so they can tell all about the Indians. And they come to make a game out of talking to the anthropologists because it's humorous to have them come and live with us and try to get more knowledge about the Indians. And I didn't want to be treated like that. Even though they knew me, they knew my family, they also knew that I was a scientist and they also knew that I was working for the tribal government. And so I had to let them know by the way I behaved and the way that I talked to them that what I was going to do was not going to infringe upon their knowledge base. It wasn't going to infringe upon their right to go about their lives and I wasn't going to sell them out. It was very important that they knew that. They don't want people knowing where they go because all too often when they tell somebody about something, that person goes off

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and steals it. So you have to go and understand what they do, how they do it, when they do it on their terms. And typically these things can be done fairly easily. It just takes time to develop a checklist of the things that you need to find out and then you go and systematically gather the information and you take as long as it takes. Your managers may not understand why you're doing this at the beginning but when you show them that if you can document their type and duration of their exposure and show that it's different than a suburban duration and type of exposure and that if you apply this in a cleanup situation that you can achieve better results, under the law, then they will support you.

Your values are a reflection of your culture. When you go out and you talk to these people, they will know in your heart who you are and what you're about. And it's very important that they understand this.

Building tribal capacity. It's always good to try to think about bringing up, bringing along younger people so that they understand that there is a life out there beyond just being a slave in a factory. That they can indeed help people. They can indeed collect information and do things that are good for the people. But there are things you have to do. You have to learn about a bunch of different things. You have to go to school. You have to graduate from school. You have to learn how to use computers and all the technology. Just like I said earlier about metal. You have to learn about it. You have to learn how to use it and bring it within your world. It's a reflection of your values. Next slide.

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Exposure. It truly dependent upon your cultural activities. The second one, the reason why you're involved with those things that you think of as part of your culture is very important. You can document this, the length of time, how you get things and you can do it in such a way where you don't divulge proprietary information. Once you start understanding how to build the framework of documentation so that proprietary information isn't released, then it becomes easier and easier and easier to know who to talk to and what to talk to them about within their timeframe. Next slide.

I can't emphasize the first one enough. Traditional Native Americans, Native Americans in general have different levels and patterns of exposure. You have an advantage of being able to understand this and know this and document this if you're going to go and talk to a federal government or a county government or a state or local, whoever is planning to do some sort of process that involves natural resources, that may impact your natural resources, your foods, your medicines. And their quality of health too. I mean if they're doing something that may you know, undermine their own work because you know more about the environment than they do, it's good to communicate and let them know that you're aware of these things and that they need to be addressed upfront in a pre-decisional manner, before people start planning too far ahead. Communication is very important, being able to talk to people and show them that your line or reasoning is very rational and well thought out. It's very important. You don't want to expose your family or your people more than necessary or at all if you can help it. Next slide.

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This is a typical exposure model. I mean it's just a schematic practically. There's some sort of release, gets into the environment and in the suburban lifestyle it gets into the food and then people buy it and eat it. For an example, you know, the release to the environment could be pesticides. You eat small amounts of pesticides every time you eat those salads unless you're eating organic food. I've shown this slide to lots of children. They call this the shopping cart slide. And they understand right away what it's all about. Oh, things get in our food and we eat them. Oh, that's pretty simple. At the store. Huh. Imagine that. I thought the food at the store was supposed to be good for you. Well it is but don't let me kid you. You can receive exposure to chemicals even at the store and you may think that things are okay. The bottom right hand side says little environmental contact, few exposure pathways. Very true. Look them up. Next slide.

A Native American's resource, we've chosen the cattail as a real common one because everywhere I've gone across America I've been able to find cattails. And I've been able to find Native Americans who've utilized cattails for one reason or another; food, medicine, lengthener and with flour. Lots and lots of reasons to use them. They still use them all the time today. And so we took this example and put it on the slide to show that natural resources have lots of uses. Lots and lots of uses and these uses haven't been well documented by practically anybody, especially when it concerns 540 and plus Native American federally recognized tribes here. There's lots of different resources out there that have never been documented as to the type and quality and quantity and uses that they have. Attempting to do that by just going out and trying to

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take it from the elders is not the way to do it though. You have to go out there and establish your credentials and let them know that you're not going to use the proprietary information for some other thing. Next slide.

People are part of the ecology. Native Americans are indeed part of the ecology and they're woven into it by a lot of different ways, pathways and through time and through the blood in the ground. They have to do a lot of things in order to be what they are, but most of them like what they are and they enjoy being who they are and working with being part of these materials. It's cool. So, you have to realize that there's a lot of ties to the environment that haven't been teased out and knowing these things is going to give you as a tribal g that haven't been teased out and knowing these things is going to give you as a tribal government leader or as a staff person working for a tribal government an advantage because you might have an opportunity to speak up in a planning session and say hey wait a minute. There's people that utilize this resource right here and we may want to evaluate this from that perspective. Next slide.

When we go out and talk about cultural risk, a lot of people we talk about don't have a clue what's going on. What do you mean cultural risk? And a lot of people say what? I don't have a culture. I'm an American. Baloney, everybody has one. It doesn't matter if you're Native American or non-Native American, you got one. It goes a long way back. Some are just more, I guess robust you could call it. Robust from being in that area where they come from. All those things, you know, those habits that you have from your elders and your grandparents, irregardless where you come from, are there

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because of some reason and you have to recognize that. Communities that are trying to address and impact that maybe are not Native Americans, have to recognize that they too have trappings of their own culture and that those things got to be protected. Everybody has a right to address this. It's not just for Indians, it's for everybody. Some practices really are important. It takes a little bit of finding and digging to find out why they're important. Why the heck did your grandma do that thing? Well, probably a cultural thing. The bottom one is the Traditional Environmental Management Science. It has been codified into law. I'm going to keep repeating that. Next slide.

This should be slide 20, right?

Barbara Harper: This is the expanded risk framework tridents.

Stuart Harris: Excellent. The center line of reasoning, the white boxes is a typical risk process. Has an identification, being transport, human exposure, human toxicity and sensitivity and then the characterization. Our work throughout the years has led us to identify additional components that need to be incorporated and intertwined within this process in order to make risk assessment better. I mean if you have to work within the box of risk assessment, there are things you can do to make it better. I'm not saying that risk assessment is the only tool. I'm not saying that there aren't things you can do before risk assessment is initiated such as an alternatives analysis. I'm not saying that you shouldn't do those kind of things, or you shouldn't look at comparative risk or things like that. But what I am saying is that if you are working within the box, you might want to think about this slide and about the fact that there are things that you can do and you

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can suggest and you can bring out that might help you and your cause, you and your people. For instance, at the very top, identifying what is at risk. Resources at risk. Dr. Harper and I have worked on these things and we've come up with a thing called a dependency web. At any location you can find out what's important to all of the people at the table and put them out front and identify what is at risk. It doesn't matter if it's like a plant or a chunk of culture or money or whatever, as long as it's put on the table up front, then people can use that as information they can start off with to make better decisions.

The characterization of the risk at the very bottom is very important. It's important to participate throughout the whole process at the end when they start to write about the story of what is at risk and how is it being put at risk. That's part of your job. It's your job to understand and it's your job to make sure that you're there. The two green arrows on each side of that, the left one is the ecological exposure, sensitivity and logical risk. This is a fairly new thing that's been going on, I don't know, 10 years old, whatever, but it's now starting to become part of mainstream risk assessments. It used to be just a thin veneer over a human health one. They used to just evaluate a couple, what they thought were key species. They call them species of concern, and they evaluate them based upon their best information that they have on animals uptakes, animal respiratory rates, a lot of times these are scaled up laboratory animals, things like that. For instance, a lot of the computer models that are used in ecological risk assessment, scale things up or down from a cow. Like a duck is just a two and a half pound flying cow from a computer model perspective. It's important to know these

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things. It's important to be involved in the process so that you don't get sidelined into picking 7 or 8 animals in some different hierarchy that somebody else chose when you talk to your elders and you find out that those things are important but there's a lot of other important things too.

On the right side of this is the cultural side. You can't separate man from who he is, from who he's been and who he's going to be in the oncology. This is a component that we've been working on, trying to make it more mature so that everybody has an opportunity to define what is at risk and how to measure it. Next slide.

When a person who is used to doing risk assessments on spreadsheets, they can get trapped into doing this process as part of a project. And what happens is that they take a set of what they hear is important things that maybe some Indian people brought forward and they divvy them up and then they say well some of these are human beings and some of these are ecological things, let's take the ecological things and then show some linkages and show some trophic levels and then we can calculate these things and show what kind of risk it is. But if you try to take that process and work backwards, it don't work. It doesn't work. Tribal culture is much more robust and in-depth than a simple spreadsheet. And I challenge anybody out there to prove me wrong on that one. Take a spreadsheet, take your best spreadsheet calculations and try to back calculate them to try to get a description of the culture at risk. Next slide.

I was asked once by a very intelligent man, how can a culture be irradiated? And my answer necessarily had to be when a component of the ecology of, which I'm

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dependent upon, has a pollution impact that contains radio nucleons and I am forced to abandon the area, those resources, and I'm forced to cry over the fact that those people, those animal and plant people are lost to being my people from now and forever, that's how you irradiate a culture. You only have to take a look at how much of that part of the culture you're impacting. It may only be a small area, but it doesn't matter. You're still impacting a very, very complex and intertwined behavioral response system between humans and the ecology. How can you put a price on a sacred song? Well what is the cost of the songs that we sing within our churches. The songs that we sing to our children that are so old that our elders tell you that they have been brought down from time in memorial. How do you put a price on the loss of something like that? The value of that is enormous. Some of these songs that people sing when they're out gathering food, they sing them for a reasons because they're part and parcel of the culture and of the ecology. They are also intertwined in those songs lessons. Lessons about how to behave, how to behave in the ecology so you don't wreck it so next year you'll have food.

What's the cost of loosing a cultural attribute? There again, you know we're talking about something that has been around for possibly thousands of years and you're talking about what's the cost of loosing it forever? It's pretty important to recognize that there are these things out there and that when you're, when you're working on a project that is big and important and it has lots of Indo-European money attached to it. By the way, money is a cultural attribute. It's very important to understand that these things need to be placed on the table so everybody can recognize them. Next slide.

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This is a fact. Has anybody every eaten here that has been on the highland sage? It tastes just like the sage. It's really good. It's become part of the sage. You don't even need to salt it, it tastes good. Same thing has happened to lots of people around the world. They've become part of their ecology. There's nothing you can do to change that. You are what you eat. Next slide.

How do you measure cultural risk? Well you start off by talking with your elders and trying to gather as many oral histories about the place in question as you can. You try to quantify the current cultural practices if they'll let you or try to divide some sort of methodology to find a surrogate so that you can say that these people are out here doing something, like instead of, . . . you know there are agricultural practices out there that may be close. You develop maps. Most of the times these maps are little more than charts. There's a difference. You work out what the webs are, the interrelated things at risk. There are actual location webs you could do for a place that might be impacted. You try to derive harm scales according to the value of the resource at risk and you try to put them into a perspective. You try to develop metrics for determining what is going to be impacted and for how long and for what aerial extent and who uses it. This is good for stewardship planning and that would be the interim planning between the time that most of this stuff is cleaned up and then you still have to finish it up. And closure planning, where you're done with the project and you can release it to the people. Now if you released a piece of land that has been cleaned up to industrial levels, would that be appropriate? Well it depends on where it is. If it's in an area where Native Americans are gathering food? Maybe not. This goes to the next one

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which is land use planning which occurs everywhere, within tribes, within state governments. Land use planning is important and you have to quantify a lot of things. Sometimes you can't though, but it's always good to be aware that people may be using resources out there that maybe you're not familiar with. So you have to try to find those things out.

Quantifying residual risk. That's the same thing I talked about, about the closure thing. If you have a contaminated subsurface natural resources, they have a residual risk which you're going to have to take into account in planning for the future. Next slide.

A tribal leader needs to have at his fingertips, well organized, well defined, and well thought out information to make the very best decisions. We all wish this could happen all the time. If you choose to understand more about cultural risk and risk and risk assessment and risk management, then you begin to understand that there's a heck of a lot better ways out there than just simply reacting to something. Our elders don't like, just to react to something. They like to think about it. Anybody that's ever gone to an elder and talked to them knows that they like to think about things from every angle and they like to make sure that they are very aware of what it is so that they can develop good opinions about that thing. So it's important to stay away from crisis management, especially when you're dealing with pollution impacts. They may laugh for thousands of years. It's important to involve as many of the people as you can so that you can have the best information. Next slide.

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Some of these information sources are these things listed here and it's always good to have a very good firm knowledge of your laws, what you can do and what you can't do. Or what you could possibly do in trying to readdress your activities, your objections to something. It's always good to understand what the new European infrastructure development process is so that they don't impact your resources or pollute your ground through the building of infrastructure. The city of Seattle right now is trying to look at its infrastructure so that it can make it more salmon friendly. It's always good to understand all these types of information for your own use. And it's important to understand that these things can be formatted from a risk perspective so that they all look and feel the same so that they're more easily used. Next slide.

This is a representation of the type of information of how when you talk about cultural risk or risk to your community, how you can talk about all the different levels. And we could have stacked 30, 40 of these things on here, but all these things on here are important and all of them have different focuses and all of them have different types of data that led up to putting them on there. It's important that you could use these tools. Next slide.

Cultural risk. Remember that cultural impacts are not cultural risk, okay? If you're talking with Indian tribes, the elders are very, very, very important. I can't understate that enough. You have to establish your credentials. You have to have a good understanding of what their reference of time is and the animals and plants, you have to have lots of patience, and it's good to have a real good sound knowledge of how to use

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computers so that you can walk in-between the two worlds, so that you can express what the elders need so that their rights and their resources can be protected. Next slide.

GIS, a new tool. It's a good tool. I've got a little bit of experience in it and it's very helpful in calculating biomasses. It's very helpful in looking at the bigger picture of a small region. If you had people on the ground, ground truthing, some of your areas that you're concerned about, and that's very important to ground truth the information. You can plan better, you can avoid making impacts on your ecosystem that are undesirable. But remember, GIS is just a tool and it's not a very good tool if you don't go out and ground truth what you think you have. Cause then you're just diluting yourself to thinking that the pretty pictures are truth. Next slide.

I put this slide in here because there's a lot of times when you're dealing with pollution, people are trying to understand if there's like ways to for a path forward, ways to I guess tease out alternatives so some sort of action. And you have to take the time to document a lot of the stuff you do. Travel leaders have to be smart about risk assessment and risk management. They have to understand that in their dealings with outside government entities or the county, the officials or whatever, that that's the language they talk. Next slide.

This is just a simple, simple chart. It's not a map, it's a chart and this is how you can display resources. At the little squares there, those things could be a zone, around one plant and it might be hundreds of meters across so that a person who sees something

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like this, if you're trying to demonstrate that in this area, you have these kind of resources, that a person wouldn't go out there and dig it up. You can put these kind of things in your GIS database so that people don't see the point specific resources. And in Indian country there's a lot of people out there that would be glad to find out the raw data so that they can go there and dig something up for themselves. This is what we want. Well this isn't what I want. I'd rather prefer that the information that is proprietary stay that way. It's not my business. Next slide.

When my people signed this treaty in 1855, they understood at that time that the government was going to allow them to go out and gather foods and hunt fish, pasture animals and stuff. At that time they understood that these resources would be there, be accessible and they would be good to eat. They weren't expecting, I suppose, expecting that everything would get all messed up. They weren't expecting that people would be applying all these chemicals over the land randomly or with overspray and that they would have to be absorbing this into their bodies. They weren't expecting that kind of thing. They were expecting that their food would be available and it would be good from them. And this is how it's interpreted many times. So it's important that you recognize that tribal people go out and gather food and they really do eat it. They really do use it. And they really do gather it in a way that's reflected upon cultural teachings. Next slide.

The prevention of losses is always preferable to mitigating to something. It's always preferable. If you have an opportunity to plan, to avoid harming something in your

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ecology, you have to stand up and say well we can do something different that achieves the same result because our resources are at risk here. Our culture's at risk. The second one there, elders, once again, very important. They know what's going on. They know where things are. It's like you go into your house and you know where you put your keys, right, everyday? You never lose your keys? Well others know a lot about where there are things out in the environment and it's always good to ask them where they are. They'll tell you where they are maybe at this time of the year, otherwise you got to go out and spend a hell of a lot of time looking for them yourself. Next slide.

When you talk about organizing data, it's always good to get the perspective of the people who use environmental data, the stuff that's out there and why it's out there and when it's out there. So when you're planning to build a database, you don't go and decide from some book which are the species of concerns. You go to the people who actually live with the species. Next slide.

The things that happen out in the ecology, come and go. And their perception of what's happening is far different than yours. And as the second one said, you know, it's all relative to the framework, the frame you're looking at. And if this wasn't the case then, then those people that hunt caribou north of here wouldn't be able to gather food because what they know about the time and the frame of reference that the caribou have is important for them to go out and gather food and how much to gather and how to behave when they do gather. Next slide.

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It's always good to get a bunch of elders together to talk about something because they play off of each other and they talk about things. It may take a long time and you may have a lot of fun, but it's always good to get elders together to talk about resources and where things went and who was there and the people and how these things came about. Because for instance, there are resources out there, some plants for example. We have a plant there that has these things that the elders call sister plants. And morphologically they look very, very similar. But, you know, there are differences that the elders will tell you that will keep you alive. For instance, we have a medicine plant that grow with its sister plants and the difference between the two is so slight that if you didn't know the difference you can dig the poison ones. So it's very important to understand the schedule of arrival, and where they move throughout the watershed, the subunit of the ecology and the aspect of where it is. It's very important to understand these things. A lot of this information is contained once again within elder people. Next slide.

The depiction within GIS or within modern media is still in a very premature stage. It takes a lot of time and effort to develop a good graphical representation of how things move throughout an ecological unit through time. The static representation of this can be misleading. You can be fooled into thinking that that's the way it is all the time and it's not. The bottom one relates to the caribou. You got to rely on the natural resources in your ecology for food. You become to understand real quickly when those things come and go. Sometimes you only have two weeks to get what you need and you have to travel many miles to gather those things. Next slide.

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These are my concluding remarks upon this subject. The type and extent of contamination, development now has to be evaluated for multi-generational risks, cultural attributes, such as how to gather and where and behavioral modifications have to be evaluated in many communities. The loss of transfer of information has to be brought forth because there are things out there that we need to regain knowledge of. Tribal communities are going to have to consider how they're going to deal with infrastructure or pollution impacts, and how they're going to record those things for future generations. And I'm not talking just the grandkids, but many, many generations down the road. Next slide.

We must remember that irregardless of where you come from you have a culture. The culture is very old. Some of the cultures have more components to them because the people are still here living within the ecology. And they're very dependent upon those resources which keep them alive. So things that last thousands of years, need to be thought about from a multi-generational perspective. Next slide.

Tribal people, wherever they live have developed the behaviorisms that has allowed them to thrive within their own ecology. This is traditional and tribal environmental management science. And today I hope I've given you some food to think about, about cultural risk, how to measure it, how you can measure it and the fact that this is a tool which tribal leaders can use to their benefit in dealing with all sorts of different types of impacts because as we all know, government officials are oftentimes overworked,

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underpaid and need to have as much good, clean information as they can get. Thank you. *(applause)*

Barbara Harper: Okay, I have the microphone now and if people have questions I'll walk around, otherwise, if it doesn't reach, we'll have to repeat it into the microphone so Stuart can hear it.

Al Young: Stu, this is Al Young. Thank you, we really appreciated your input. We would have liked to have had you here to present it with the traditional flair that you do do it, but thank you so much.

Stuart Harris: Thank you, Al.

Al Young: We look forward to trying to do this with you at Hanford and incorporate that into a more complete picture there.

Stuart Harris: Well, I'll be glad to. You know I work on Hanford things and this is a continuation of a one segment of the things that we necessarily have to look at.

Barbara Harper: There must be some reactions and questions.

Stuart Harris: Like I said earlier, I gave a presentation at waste management. When I was done, there was nothing but stunned silence. So if you guys don't speak up, I've given Dr. Harper permission to use a little audience participation and call on you.

Kim Tallbear: Stuart, this is Kim Tallbear.

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Stuart Harris: Hello, Kim.

Kim Tallbear: Have you thought about the, I like the slide that you had making sense of cultural risk. Have you thought about the implications for people looking at cultural risk from other cultures, both nationally and globally? Because it seems to me that it's a real opportunity for tribes to take some leadership in that area.

Stuart Harris: I have thought about that. Merv Tano has been gracious enough to guide some of my thoughts and this process which we are embarking on, has necessary has to be a global process, because this is only one earth, one world and there's an enormous amount of knowledge about there that still is there. We do realize and as travel people, that the development of the, I guess, capitalistic ecology mechanism has done a certain amount of change to local ecologies all around the world. But those people who are living with their natural resources in their traditional way can benefit from what we're doing here today, what we're talking about today. They just need to listen to you people after you digest this a little bit more, and to understand from the perspective that they're knowledge is just as important and just as valid as anybody else. Did I answer your question?

Barbara Harper: Merv has a question.

Merv Tano: Stu, this is Merv. Thanks for all of those comments. Appreciate your participation this way. As you were talking, I was trying to outline the significance of place in culture and I filled out one sheet and I started on the second sheet and that

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second sheet is about probably about halfway filled out. And in trying to organize it in my mind, a place as a visual phenomenon for example, the fact that there may be archeological artifacts there which bring forth memories. The fact that there are certain animals there, specific kinds of animals there. And we can go on and on about the things that are in that place. And you take for example the auditory aspect of the place, the sound of the place, the sound of very specific kinds of animals. The sound of wind going through a particular path or a particular grove of trees. The sound of water coursing through a specific named waterway. And then the relationship between place and stories. Stories of the place. Stories that are told only at the place and stories told perhaps only by people of that particular place. So while I can perhaps intellectually go through this process of outlining or identifying all of these aspects of place and the importance of place to a particular people, the question that I have for you is that how do we use cultural risk to first of all, I guess include place as a concept that's imbedded within the culture and then how do you go about identifying the kinds of metrics if you will. The kinds of evaluative criteria that we can use to protect place and all aspects of the place. And as I say, you know I've only discussed visual and auditory, I haven't talked about emotional and spiritual and probably a whole range of other kinds of aspects of place.

Stuart Harris: I thought about this place thing a little bit and it necessarily is tied to time. And I can give you an example. If within that place there happens to be an impact, whether it be visual or auditory or in a physical manifestation, and there's a mechanism place where you can address that, of course. And the people that are

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working on this particular problem have the, I guess, the training to go out and talk to those people who are of that place to get their information so that things can either be taken care of or things can be planned for so that additional impacts won't be done. When you go about gathering the information from those people, you have to understand that if the resource is a finite resource, you must know that. If it is a unique resource that is only found there, you need to know that. If it is a resource that is gathered there or is experienced there that is never experienced anywhere else, you need to document that. If it's a resource that is part of the life of the people, the time life of the people, but it is found elsewhere, that has to be documented and recorded as such because if the people have to change their behavior, change their culture to accommodate the fact that they have to address this impact this way, then you have to go to another area and those resources must necessarily be evaluated as to their quality and quantity and distribution so that you can get an idea of how to plan to address the use of those resources and take into account what your or their impact is going to be on having to change to a different type of behavior. And these things if done carefully and systematically can be used for the tribal elders to plan on how to address the impact. I have here some notes of things that you have to take into consideration like for instance, the resources, how they come and go, and who they're associated with and things like that.

Merv Tano: Say Stuart, here's where I have this problem, okay. It's this conflict between the left brain and the right brain. On one hand I hear words and I sympathize you know, in the purest definition of the word sympathize with the notion of holistic view

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of culture. And yet, in order for me to get to these particular notions, I have to engage in this kind of reductionist exercise and start parceling out all of the aspects of place that start making sense because without going through that reductionist exercise, I, because I'm dealing with the left brain now, have got to deal with a particular water course, I have to deal with a particular animal, I have to deal with a particular plant. As opposed to that concept of place. You see my dilemma?

Stuart Harris: I do and I guess that what I was explaining was merely for purposes of I guess accounting for mitigation, for the actual loss of particular resources and not for the what I think you're grasping for is the complete loss of say a particular place. You cannot, once a place has been lost due to pollution impact, ever get back that place. If it's gone because you can't go back because it's so messed up and the quality of all the resources are so degraded that it's unusable in that place, I think that's where the knowledge base of the elders has to come into play so that they can at least record it. Oral history, why it was lost and to use that as a teaching tool. It's a terrible thing to think about, Merv, losing something like that. But if it happens and you have to deal with it, then you have to try to make the best of it.

Roger Gollub: Hi, Mr. Harris, this is Roger Gollub, with Indian Health Service.

Stuart Harris: Hi, Roger.

Roger Gollub: It wasn't a stunned silence, it was really the appreciative one here. I think everybody's quite content with an excellent presentation.

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Stuart Harris: Thank you.

Roger Gollub: I'm going to carry on with one of the questions that Mr. Tano was bringing up. I was just curious if you'd considered this. Your presentation was quite compelling about the inextricable link between culture and ecology and environment in the white boxes in your diagram there. And I was wondering, since there has been the unfortunate experience of displacement of a lot of cultures on this continent and others, have you looked at or are you aware of anybody looking at the boundary conditions of those metrics that we were just talking about. What happens when a culture is displaced from a place? What is the consequence on that place. I'm quite convinced there are consequences and perhaps by looking at some of those unfortunate historical events, it may be possible to set up some boundaries of what that interaction and maybe find ways to maintain what is precious about place when cultures are not displaced?

Stuart Harris: I could give you a quick example. When I was in South Carolina and I was talking to some people who had actually, they were older people, they were non-Native Americans, but that's okay, and they were talking to me about the displacement of the Creek people in that region and how when they left the environment because of the way it was developed, has been degraded and it has become almost a monoculture down there. And recognizing that if it's already happened, there's only so much you can do. If you can plan for it, there's a lot you can do, both in terms of addressing the people's needs and in terms of addressing where they were to make sure that the

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environmental conditions aren't degraded beyond some sort of recovery. Does that answer your question?

Barbara Harper: He says yes. You didn't really finish explaining the difference between a cultural risk and a cultural impact.

Stuart Harris: An impact may be recoverable. A risk is a potential.

Barbara Harper: I had a question about when you were saying the information that tribal leaders need, could you expand on that a little bit in terms of both looking at things from all angles rather than trying to influence them to make a particular choice and the kinds of information, breadth of information you think they need.

Stuart Harris: Tribal leaders have a very tough job. Not all tribes have a lot of money to work and gather good tools to get the things they want in the capitalistic society we have to exist within. And so they have to try to make some pretty damned tough decisions. And of course there are people out there that belong to tribal governments that necessarily you know, have a way of life that doesn't need money. Well it doesn't need money for them to live that way, but it might need money for them to try to protect and when the decision maker is about to make a decision, you would hope that this person has all of the best information such as maps, testimonies about what was there and whether or not the place that might be impacted or that has been impacted has a value that has been quantified or documented in such a way that they can understand if there's an alternative or a substitute resource component for that. And whether or not

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this makes sense in their overall travel structure of trying to do economic development activity. So the best decisions are brought about by using the most I guess up to date and complete data sets that you have and also working with people that believe in what you're doing in a teamwork fashion, where everybody's accountable for what (*inaudible*) forth to the decision maker's plate.

Al Young: Stu, this is Al Young again.

Stuart Harris: Hi, Al.

Al Young: Over the next few months we're going to be doing a lot more thinking as we look at where closure is going and stewardship at Hanford, but one of the issues that's come up is this issue of unacknowledged transfer of risk. I want you to do some thinking about that with us. One of the concerns that we have is that when one destroys a site because of a perception on what that risk is, that what you oftentimes end up doing is not only do you transfer that risk that is there from that waste for example, you're transferring a certain amount of risk to the men and women who are involved in the cleanup, but you're also transferring that risk elsewhere into the environment. If you cleanup along that river, you're transferring some of that into a system that perhaps would be greatly impacted, that ecological damage that may occur from a cleanup operation, you're transferring the risk from one place to another and sometimes we don't acknowledge that. So we're beginning to think that this issue of unacknowledged transfer of risk may be a very important concept for us to begin to put in front of our leadership.

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Stuart Harris: I agree Al, I think that much more work needs to be done on making sure that all of the pieces of any potential impact are taken into account and at least addressed by noting it and things that may affect the local populations or tribes be brought forward so that they could at least say, yeah, that's okay, or we can deal with that, or we need to work together to find a solution or maybe we think that we're receiving a little bit too much of a impact or we think that our risks are higher than what they should be. I agree, thank you, Al for that one. I'll make sure we think about that.

Richard Pacheco: Stuart, this is Richard Pacheco. I'm with the All Indian Pueblo Council, Pueblo office of the Environmental Protection in Albuquerque.

Stuart Harris: Hello, sir.

Richard Pacheco: And I have to tell you that you've been a very elusive individual. I've been wanting to meet you for at least a year now and I've traveled to several gatherings where you're scheduled to be at and you just haven't been there. I still look forward to personally meeting you. I really enjoyed your presentation. Yesterday's presentation that I did here talked a little bit about what you talked about today and you were much clearer and much more articulate and your experience certainly reflects in the work that you're doing. And I appreciate it. I'm being handed a picture of you and now I know what you look like.

Stuart Harris: Oh, my God! I hope I'm not doing something stupid.

Al Young: It's the picture from Chicago.

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Stuart Harris: Oh no!

Al Young: Barbara's bringing them to give to you.

Richard Pacheco: So now I know what you look like but it's still a mystery as to what I look like, so maybe one of these days we'll meet. Enjoyed it immensely and hope to be able to work with you in the future.

Stuart Harris: Well, I appreciate that Mr. Pacheco. I offer you know, the things that I've learned to all native peoples and all people in general. It is in my opinion, my humble opinion that time has come that we need to expand the way that we think about the environment, its resources and how we need them. It's very important and these things have not been brought to fruition and I hope that you and your coworkers, when you're addressing those impacts in your country, have an opportunity to express your relationship with the environment in such a way that it's taken into account up front early in a decision process.

Barbara Harper: Richard is the one working on tribal hazard ranking system.

Stuart Harris: Most excellent, most excellent.

Brenda Brandon: Hello, Stuart, this is Brenda Brandon from Haskell Indian Nations University. I'm the TOSNAC in the (*inaudible*) office. I work under George Godfrey, Dan Wildcat. I think you're familiar with that program.

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Stuart Harris: I think I've looked at parts of it on the web. I'm not sure. Pleased to meet you, Brenda.

Brenda Brandon: Oftentimes, I work with 47 different tribes on hazardous substance issues and you know, as far as getting cultural risk assessment information across to either tribal council, tribal EPA members, elders, the dynamics of the situation are always different from tribe to tribe. Not always are the elders given the respect and a voice that they are in other communities. So anyway how they confronted with the situation where in order to assist the tribe with technical information of trying to get information from the wrong people, and having to hurdle over the politics or whatever the situation is, cause as I say it varies. So anyway, I was just wondering if you could give advice on how to approach the true decision makers or let's say the official decision makers, the tribal council people on allowing elders to be involved in these processes when it's obviously necessary?

Stuart Harris: I appreciate your dilemma, Ms. Brandon. You've got a very difficult plate of tasks ahead of you. Fact of the matter, as you and I well know that oftentimes tribal governments seem to be kind of femoral. They come and go. And the power structure is oftentimes oriented around families within a tribal government. And getting to the right people it's easiest hard to do. I would suggest if you have I guess the time and resources to make sure that you exhaust all of your options for going through the regular channels of communication from the top down process, making sure that obviously all the protocols have been satisfied. But your need to gather the

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environmental information from the elders necessarily has to come from within that particular tribe itself. And this concept of utilizing tribal specific people is something that you have to say loud, clear and often because that's where the best information is. And even though, maybe a tribal government may not have a mechanism set up so you can go and get this information in a timely manner, your best option is persistence, I hate to say that, but that's sometimes the only way you can get to the people you need to get to. I don't envy that that you have that kind of job. It's a tough one. But if you say up front your intentions and you show that your values are good, you have a very good chance of succeeding because logic has a way of twisting people's minds. Especially if it's good logic and it's well thought out.

Deb Abrahamson: Hi Stuart, this is Deb Abrahamson from the Spokane Tribe and I met you briefly down at the Indigenous Environmental Conference last spring.

Stuart Harris: Oh, hi.

Deb Abrahamson: I know you exist.

Stuart Harris: I really do.

Deb Abrahamson: But I had a question in terms of how receptive are the federal agencies in terms of this approach and the concepts and what seems to be the most difficult issues that if there is some concern as far as being able to understand this approach, what are their concerns and where do you feel more information or more emphasis needs to happen?

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Stuart Harris: I can't speak obviously for the federal governments, but I can tell you about my experiences with dealing with several different branches of it and the initial I guess consultation processes is at best tedious. There have been times when I've tried a bunch of different ways to try to communicate with letters and phone calls and visits and what eventually worked the best is talking to people and bringing tribal politicians, the elected people with you to talk to these people on a face to face basis and let them know that your intentions are well-meaning and they're straight forward and that you are very interested in addressing issues that impact your resources because you have things at stake, greater than and beyond just simply a public at large. And this method of having people that are accountable to all the people in the tribe with you is a pretty good one and when everybody gets the opportunity to meet face to face then they see that you're not just some stranger on a phone, that you're actually (I'm on a phone right now) but that you're actually, you're really there and that you do smile and you do have mannerisms that they can look at and be, see. This is the opportunity at that time after you establish that sort of relationship is when you . . . I'm a ask person. And I truly believe that if it's worth asking for, ask for it. And at that time, if you have a desire to protect your resources, ask for what you want. The least they can say is no. I mean at that time, and at that time then you can develop the strategy and how you can get the answer you want. Being polite is good. A friend of mine, he's gone now, he used to always tell me, "Hey, you can get a lot more, . . . you can attract a lot more flies with honey than vinegar." Well it's true and it works. It works because this guy was patient

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and he was able to go and talk to the people about the things that he cared most dearly about which was his people and his resources. So ask. That's the best way to go.

Barbara Harper: Is there any response from the federal people and how they'd like to be approached, or what information they need the most in order to get them moving?

Stuart Harris: Good questions, Barb.

Barbara Harper: I don't see any ready to respond.

Todd Hinkley: I'm Todd Hinkley from the Geological Survey here nearby. I'm going to be giving a talk a little bit later on how climate variability and climate change are risks themselves and related to other risks and to speak about what the hopes are of federal research people as opposed to the federal people here with regulatory responsibilities, I would just like to say that it's my strong impression that both federal and university research people and others are very hopeful of having approaches from native people because of the old knowledge that they can bring to bear as we try to find out about the changes that have occurred in the earth and its climate. So just to make the point, apart from regulatory issues, the research people seek involvement from native people, different kinds of native people with different educational backgrounds, both academic and traditional, to help to put new knowledge into the research process, both with climate, global change, ecological studies and assessments of risks from the more typical points of view that have been discussed here at this meeting of toxicity.

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Barbara Harper: So do you think that tribes should approach researchers or researchers should approach tribes or is there a forum where the people who are interested in a topic show up and just make the connections, the networking just happen? Is there a forum that you know of where those connections are made?

Todd Hinkley: Myself, I'm new to the protocols, but when I give my talk I'll mention some present projects where contact is being sought and I think what we need to do on both sides is keep our eyes opened for people who are doing things that are within our realms of interest and make the contacts. I hope that some of the things I can point out later will be of some interest to the people here at this meeting.

Stuart Harris: I would like to add Dr. Harper, that many, many of the people that I've talked to about this particular subject would like to partner with researchers but they would also like to develop their own tribal capacity. And so it's a two-way exchange of information and energy so that the elders can not only help young people, but the researchers can help those same young people mature into sometime more than they are if they didn't have that kind of opportunity.

Barbara Harper: I wanted to follow up on that too. There are a lot of imbedded issues in terms of controlling the research and who has access to the data and who gets published and even the (*inaudible*) question, if it's a federal research project, we probably don't have time to address them all here, but I think there's a lot of potential if we go slowly and carefully. I know academia's been through that 10, 15 years ago with some of the patent questions. Research done in the lab, who owned it, what could be

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done with it, who got the publish, who got to say you couldn't publish something, so there are models there and then there's a lot of the human subjects, the tribal research code, a variety of things like that to make sure that we're not talking junior partner here but at least equal partner if not I don't know, superior partner, in terms of who gets the final word. We seem to be running out of questions.

Daphne Moffett: This is Daphne Moffett, I'm from the Office of Tribal Affairs at ATSDR. My response would be that when we're meeting with the tribes, especially doing health assessments or health consultations, as the tribes are more aware of cultural risk assessments, if they bring that up, that goes a long way I think for some of our health assessors to hear it, not only from the tribes and what they're wanting, because that's really why we are asked to come out is the tribes who've requested us to be there to conduct a health assessment. So if they lay it out in no uncertain terms that they want these things taken into account, I think we'll do that to the best of our ability realizing that we have several people who, if there's not a number attached, can't quite figure out what to do with that information. But it's something that we would welcome to use in our process as well.

Stuart Harris: I appreciate that. That's very, . . . makes me feel better. I'm glad that you guys have taken the opportunity to come here and participate in this very important conference. The health of the people, as I've said probably a bunch of times in this presentation, actually depends upon a lot of different factors and a lot of those factors are inextricably tied to environmental resources. I would encourage all of the tribal

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people to take that into consideration when they're dealing with federal government entities like the ATSDR who do have a lot of resources and who can help.

Merv Tano: Stu, this is Merv Tano again. I wanted to follow up on my first question. I think what you were saying is that you couldn't backwards engineer a culture through a spreadsheet.

Stuart Harris: No sir.

Merv Tano: Okay.

Stuart Harris: No, you can't.

Merv Tano: No, but putting myself in the shoes of a federal regulator or state regulator or tribal regulator or a federal facility manager, I would ask the question then, forget about reverse engineering a tribal culture, can we develop a spreadsheet or a model that would come close to identifying the critical aspects of the culture and including in that model or the cells of the spreadsheet, those kinds of items that could be revealed, could be described with some specificity, and that in total come close to protecting all of the cultural risks at a given place. And again, I'm thinking about place in this context.

Stuart Harris: The current state of computer modeling of biologic activities or actions is still very, very new. And a lot of research needs to be done in order to effectively account for a lot of the environmental and cultural attributes associated with any particular place. And the I guess most appropriate path forward if you were going to do

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this for a particular place and people would be to train them and allow them to develop their own metrics or ways of measuring things and to allow them to I guess incorporate some of the technologies that we have currently on the market such as computers, things like that. Seen in its infancy, there's a lot of work that we have yet to do and get to do and it's different everywhere you go with every different group of indigenous or affected peoples or communities, wherever you go there's going to be a new set of data that you have to gather and you have to analyze and model for the way it reacts to impacts of whatever you're addressing. I look forward to the future in that particular venue.

Barbara Harper: If I can follow up on that. Were you asking in part, is for any particular place is there always a reason why it is important educationally or a reason why it is important. So you're looking for categories that you always need to ask the reasons why it's important. And the same thing's been done for culture. In a cultural definition and depending on what you read, should always include for instance, a land ethic or a way of relating to the environment or a way of naming things. And people have develop certain lists of things that are supposed to applicable whatever the culture or whatever the place, is that what you're asking?

Merv Tano: Well I'm not looking for a universal model, but for a particular tribe. And again I'm engaging in the reductionist exercise over here. If we take water for example, there are economic attributes of water. There is a visual attribute of water. There is an auditory attribute of water. There may be an emotional attribute in the sense of knowing

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that the water is pure. There is a spiritual attribute in the sense that the water is used for example in ceremonies. Okay, now, and you can go through and say well there are plants and there are certain kinds of species of animals that have the same kinds of attributes. And if we can protect those particular attributes, do we come close to protecting the tribal cultural interest in a particular place. Because in my mind for example, in terms of the emotional, Stuart, realizing that there is a history of the people in the place, and those histories are imbedded in stories and in songs, I guess in my mind, that speaks to access of the place and also the emotional question of whether or not the place is defiled or undefiled. And again, I'm struggling in coming up with this kind of a framework so we can say to someone who is also engaging in this kind of reductionist exercise, here are the kinds of cells and here are how we describe these cells, and here's for each of these particular cells, what our expectations are. Does that make sense?

Stuart Harris: Yeah, it sounded like you needed to finish that thought with a, "at what price." Are we going to put forward to either protected or pay for the damage of it. Because much of this has to necessarily, because we do live within this capitalist system, has to come back to money. Like it or not, and the involvement of the people and the place in question has to be from the beginning to the end so that nobody's left out thinking that they've been short changed. Another money thing in there.

Dan Tano: Stuart, this is Dan Tano.

Stuart Harris: Hi, Dan.

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Dan Tano: How are you doing? Tied into something you said and something Merv just said, earlier you said that we federal employees are overworked and underpaid and we were all nodding. But

Stuart Harris: Well it's true. I mean look at what you got to do. Never mind.

Dan Tano: And what Merv was getting at, maybe what I perceived what he was getting at, tied into what you said is we as federal employees and what our managers need are the most specific information that you can give and the most data that you can give us in order to factor that into our decision. And I'm just trying to emphasize that with what you talked about and what Merv was talking about, whether it's a model, a quantitative or qualitative model, something that can show us for a specific place, whether it's one small area or the Hanford site as a whole, what data do you have that you can give us that we can factor in so that we can make a decision that takes into account all the tribal interest there. And that's more of a comment than a question, but that, I just wanted to emphasize what you said about giving us kind of the play book.

Stuart Harris: I appreciate that Dan. Recognizing of course that if we had the means and the opportunity to give you all of the information so that you could just address everything related to tribal interests, especially like on something like the Hanford site, that we would have to necessarily at that point rely upon the federal trust responsibility to protect our assets, our resources, and you could make an argument at that point that well, you gave us your input, we'll get back to you. When in fact, from our experience, yours and mine working on the Hanford site, the process necessarily has to be two

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ways and often and throughout the whole process communication from the beginning to the end is so much more important after you've received some chunk of data because of the fact that you want to be assured that our values on whatever that particular piece of data is are what is represented by on the computer screen or in the log book, value of data, value of management.

Barbara Harper: Dan's comment also had a flavor or needed to see data to be convinced, rather than taking the elder's say so that there's an impact, and that's why we're doing this whole thing is, if somebody needs a number or some kind of documentation to demonstrate the impact in the first place, the decision maker needs that.

Stuart Harris: Well, in that light also, of course the needs of the collection of the data have to be well thought out and planned for so that the tools can be in place to make sure that you get what you're asking for. And this may be everything from resources and material to personnel and things like developing your tribal's capacity to address these kind of issues.

Merv Tano: Well, Stu, we're going to break for lunch.

Stuart Harris: Okay, Merv. I appreciate the opportunity.

Merv Tano: Hey we want to thank you very much, okay. And really do appreciate it and maybe next time what we'll do is we'll have a meeting where you will be the only one here and we'll have photos of ourselves that you can look at.

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Stuart Harris: Okay. You all take care now. I'll talk to you later. (*applause*)

Merv Tano: Okay, lunch is ready.

END OF PRESENTATION