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Indigenous Stewardship Methods and NRCS Conservation Practices



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INDIGENOUS STEWARDSHIP METHODS AND NRCS CONSERVATION PRACTICES GUIDEBOOK

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Written Collaboratively by the "NRCS/Native Practices Work Group"

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INDIGENOUS STEWARDSHIP METHODS AND NRCS CONSERVATION PRACTICES

GUIDEBOOK

EXECUTIVE SUMMARY

The *Indigenous Stewardship Methods and NRCS Conservation Practices* guidebook provides guidance to employees of the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) and to indigenous cooperators who work with NRCS. It provides a sensitive process in which knowledge is shared, allowing employees to incorporate the indigenous knowledge into NRCS' assistance through its conservation practices. The indigenous perspective of living in harmony with the earth and the agency perspective of scientific and experiential learning are portrayed in the words of the guidebook.

Part I - Indigenous Stewardship Methods (ISM), explains the purpose and methodology of creating this guidance and describes key concepts and items of consideration for how to work with, and learn from, Tribes and indigenous peoples.

Part II - NRCS Conservation Practices, guides the field employee through finding the relevant NRCS policies and procedures to incorporate ISMs into NRCS' conservation assistance.

We have knowledge to share with each other, and through strong relationships, we can share it positively and constructively. By honoring and respecting each others' perspectives and finding our commonality - caring for the natural resources - we can help each other help the land. This guide will help NRCS employees gain an understanding of the indigenous perspective of natural resources conservation, ISMs, and intellectual property rights. Further, it will guide NRCS employees through a process to incorporate or implement the ISM into their conservation planning process. This guide will help both the NRCS employee working with Tribes as well as our Tribal partners to make the NRCS list of conservation practices stronger, more comprehensive, and more culturally relevant to Tribes across the United States. It will allow NRCS and Tribes to work on a professional level to achieve their common goal—helping each other help the land.

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Preface

NRCS PERSPECTIVE:

To NRCS employees, “natural resource conservation” is an everyday term; however, these words mean very different things to different people outside the agency. We use it in our planning process, Farm Bill programs, policy, and everyday conversation. For the purposes of planning, natural resource considerations are broken down into soil, water, air, plants, and animals, plus humans (SWAPA+H).

NRCS’ basic tools in effective planning are grounded in (1) relationships, and (2) technical capability. In NRCS’ perspective, conservation of natural resources is the wise use of the earth’s resources by humanity. The act of conserving the natural resources in the broader sense conserves the earth itself by protecting its capacity for self-renewal. NRCS helps people learn and apply techniques (conservation practices) with self-renewal as the goal. NRCS practices are based on science. How NRCS planners assist people to apply them through the planning process is an art. Planners form relationships with people, learning their culture and their values to really understand the holistic nature of creating a conservation plan together and applying practices that make sense in the worldview of the landowner. Therefore, knowledge of what we do always includes humanity. Planners are sincere and dedicated to those two promises.

NRCS is an agency that prides itself on being a learning-friendly environment, whereby its conservation practice standards are flexible and may be revised or changed as we find new knowledge or technology. This guidebook seeks to help field planners learn technology from indigenous people which could improve or expand existing NRCS practices or create new ones.

INDIGENOUS PERSPECTIVE:

By Larry Mercurieff, Indigenous Aleut Advisor to NRCS, Seven Generations Consulting

The term “natural resources conservation” is a western management term not reflective of the relationship of indigenous cultures to their environment. When NRCS employees use the terminology “natural resources” and “conservation,” indigenous people often ask what the terms mean. This guide will help us understand each other and our world views.

Traditionally, indigenous cultures express and reinforce our relationship with the World through ceremonies and prayer. For example, we do not pick a blueberry (our sister) without ceremony and showing respect and reciprocity through prayer or giving before taking only what we need. This is to respect the blueberry and to assure the continued existence of blueberries for future generations. We live and work with these living things, we do not manage them. We see “natural resources conservation” as implying “use,” which could in turn imply exploitation¹. In indigenous views, “natural resources” connotes something inanimate, as opposed to something with which we have a relationship. It is our intention that, by increasing our understanding, we can improve our relationships for the mutual benefit of NRCS and all Tribes.

The indigenous ways of knowing differs from many in industrialized societies because the paradigms applied are based on the belief that we, as humans, are separate from everything else. A consciousness of separation makes it easier to treat other living things as resources to be used at the impulse of human wants, needs, or desires. When the consciousness of separation operates, we cannot see who we are and how our action is mirrored on the outside. The indigenous Elders say that everything is first created spiritually (inside), then secondly it is made manifest in the temporal realm (outside). If our character is conflicted (outside) it is because we are conflicted spiritually (inside). Perhaps unknowingly we cruelly judge ourselves, so therefore we naturally find fault with others. This existential relationship between man and his environment has been going on ever since man was made a steward over the environment.

Culturally diverse worldviews and ways of knowing are as important as genetic and biologic diversity in providing solutions to the ever growing daunting environmental issues we are facing. It is incumbent on everyone to find ways to reach across the consciousness of separation so we can work side-by-side, complementing, supplementing, and enhancing what we know and do for the sake of the planet. As the life support systems of the planet are being pushed more and more to the edge, we need and must help each other more than ever in human history. It is our hope and desire that everyone who reads this guidebook will embrace the spirit in which it is intended.

COMPARING PERSPECTIVES:

The definition of science is “the observation, identification, description, experiential investigation, and theoretical explanation of natural phenomena.” (The American Heritage Dictionary of the English Language, Third Edition, 1996) It would be ideal if the reader is instilled with confidence that the sciences, from the both the indigenous perspective and the agency perspective, deserve to be honored and respected. We have an opportunity to bring

them together, recognizing the similarities while honoring and respecting the differences.



Figure 1 NRCS employees and indigenous advisors discuss the concepts of this guide book.

An “NRCS/Native Practices Work Group” was assembled in the winter of 2010 to discuss the writing of this guidebook. It was made up of Native Elders/Advisors and of NRCS employees with many years of experience with Tribes, natural resources, and the agency. See the end notes for a group photo and names and titles of these work group members.ⁱⁱ The first meeting was 3 days in length and had no agenda, at

the request of one of the Elders. This allowed the discussion to be fluid and was a resounding

success. A second meeting that was 2 days in length was held to review and revise the first draft. At those meetings, this guidebook took shape. The concepts, considerations, and process outlined in this guidebook are a culmination of those 5 days of dialogue. Many of the quotes from the Elders in this guidebook were spoken at those meetings. The ideas in the guidebook are from individuals, and may not have been appointed by their respective Tribes to convey their viewpoints. The guidebook is written to show that indigenous ideas of the many Tribes have similar worldviews.

The guide focuses on data, analysis, and advice from the American Northwest; but has been written for use for the entire United States (U.S.), including the Pacific Islands and Caribbean Areas. If this guidebook does not match your Tribe's, community's, or cultural group's (or the Tribe/community/cultural group you work with) worldview and ideas, you are encouraged to take from the guidebook what is not relevant to your local area and re-write it for applicability.

Tribes and indigenous peoples across the United States and its territories (including the Pacific Islands) have economies that may vary from a subsistence way of life (i.e. hunting, fishing, harvesting, herding) to a very agrarian way of life. In some Tribes, the agrarian life (and sometimes production agriculture) is dominant. NRCS conservation practices work fine for those Tribes. There are other Tribes and indigenous landowners who would like to reciprocate learning with teaching - learn from the agency as well as teach the agency their methods. On some reservations, for example, perhaps the Tribe's goal is to use NRCS programs and technical assistance as they are. If you are the tribal liaison, through your experience and relationship, you will know whether the Tribe desires to implement culturally relevant practices. Share this guidebook with the Tribe/Tribal representatives and let them decide.

The guidebook is intended to be a "living" document that will be modified and improved collaboratively as we gain more experience and insight over time in the work of teaching and sharing with each other.

AIANEA

The American Indian/Alaska Native Employees Association (AIANEA) for NRCS has envisioned that in the next seven generations, NRCS and Tribes will be working side-by-side to apply stewardship methods together, benefiting all people and natural resources. AIANEA has inspired the idea for this guidebook. The AIANEA "Relationships" vision reads:

"The AIANEA has a natural working relationship with the NRCS and Indian Tribes. Our common goal is to take care of Mother Earth by helping people help the land. Our work ensures the health of the United States, Indian Nations and their renewable natural resources. Together, weaving traditional conservation methods and NRCS "science based" conservation practices, we make a stronger and more effective ecosystem for all. AIANEA assists Tribes who are empowered to create and utilize their Integrated Resources Management Plans (IRMP) and are eager to participate in Farm Bill programs. NRCS is empowered to learn from and utilize the traditional ecological knowledge that America's first farmers and first people have learned over thousands of years. The harmonious relationships among AIANEA, Tribes, and NRCS are honored through mutual respect and common goals resulting in productive lands and healthy environment. Amongst us, we have achieved respect, harmony and beauty."

PART I – INDIGENOUS STEWARDSHIP METHODS

PURPOSE

Share the knowledge. Knowledge, no matter where it comes from or how it is derived, is useful. On the following pages, you will be guided through the process to respectfully share knowledge amongst **indigenous peoples**¹ and NRCSⁱⁱⁱ.

NRCS and Tribes are in need of a cooperative process to expand on the Federal Trust responsibilities, foster relationships, strengthen Tribal **consultation**, and improve conservation delivery with indigenous landowners. We can gain a better understanding resulting in mutual respect, collaboration, cooperation, and partnership. NRCS can offer technical assistance to help increase the capacity of Tribes to use the best of both agency methods and indigenous stewardship, and not lose the foundation of indigenous ways for the health and well being of earth and humankind. NRCS can use technical assistance to empower Tribes, give voice to indigenous ways of knowing, and be a role model for other government agencies and the general public.

This guide will help NRCS employees gain an understanding of the indigenous perspective of natural resources conservation, **Indigenous Stewardship Methods (ISM)**, and **intellectual property rights**. Further, it will guide NRCS employees through a process to incorporate or implement the ISM into their conservation planning process. The field planner may be able to work into the 9 steps of planning what is unique and appropriate to the ISMs without going through extensive research and consultation. On the other hand, the Tribe may request that through consultation, with the participation of the appropriate NRCS technical specialists (in State offices and technical science centers), the ISM may work into the agency's conservation practices. This guide will help both NRCS and Tribes to work on a professional level to achieve their common goal—helping the land.

BACKGROUND – INDIGENOUS KNOWLEDGE AND SCIENTIFIC KNOWLEDGE

NRCS has used established methods and theory of science to provide conservation services to the people and natural resources in America for more than 75 years; indigenous peoples in North America have used traditional, indigenous knowledge and wisdom to live within and relate to the environment since time immemorial. Both kinds of knowledge have similarities, and it is through this guide on writing ISM into NRCS' conservation practices that we can identify them.^{iv} (A diagram, "NRCS National Conservation Standards Support Three Broad Realms of Human-Nature Interactions" shows conservation practice examples in Appendix A.)

¹ Terminology **bolded** are defined in the glossary at the end of the guidebook.

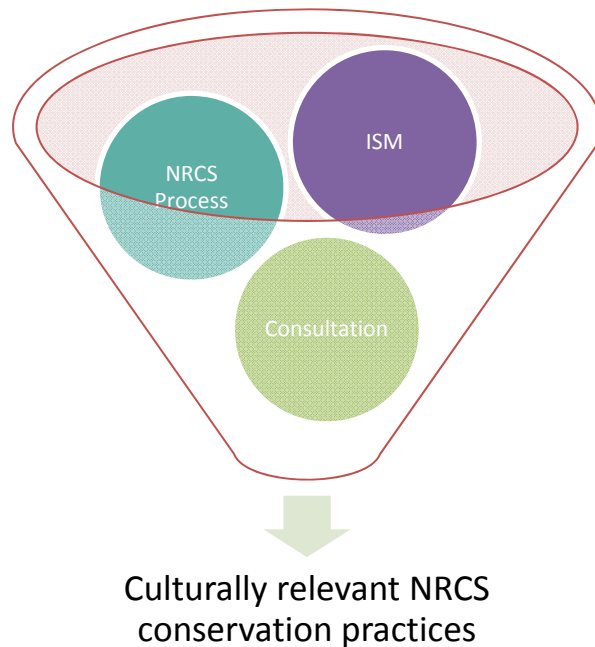


Figure 2 Culturally relevant NRCS conservation practices result from blending the NRCS processes with ISM through consultation.

The above illustration (Figure 2) shows incorporation of ISM into NRCS **conservation practice standards** by following processes already outlined in NRCS policy, and emphasizing consulting with Tribes. The process would incorporate indigenous philosophy and experience into conservation practices.

Each Tribe is different and unique. There is a cultural and linguistic diversity of **indigenous peoples** in the United States that includes 500-1,000^v Tribes and approximately 400 languages and their various dialects. The places they live and the plants and animals that coexist with them are influences on their stewardship methods.

Indigenous Knowledge (IK) can be summarized in the following way:

- Place-based, indigenous to a specific area
- Culture- and context-specific
- Non-formal knowledge
- Orally transmitted, and generally not documented
- Dynamic and adaptive
- Holistic in nature
- Closely related to survival and subsistence for many people worldwide (United Nations Educational, Scientific, and Cultural Organization, 2003)

IK and wisdom result from generations of people living intrinsically with the environment. The degree and strength of traditional ways of knowing in various Tribes and among individuals varies, and it is important to find the people and Tribes that have that knowledge

and wisdom. To find the right person/people, ask several local people, "Who has the authority or who knows the traditional knowledge and wisdom in this local area?"

It may take scientists years to validate what local indigenous peoples know about their environment. For example, in the late 1980s Inupiat hunters in Barrow, Alaska, told the International Whaling Commission (IWC) that there were thousands of Bowhead whales in the Pacific Ocean, while the IWC estimated only 600 to 1,800. It took a decade and \$10 million in studies and scientific research for scientists to confirm that the population was actually closer to 10,000 whales, plenty for the Inupiat to hunt for their subsistence way of life (Alaska Eskimo Whaling Commission). Another example of ISM, which now appears in NRCS conservation practices, is burning or controlled use of fire (see the following page for an example).

NRCS employees gain a closer understanding of the resources from the landowner - the very person or people who know their land best. The relationship between the NRCS planner and the land owner/manager begins while working together on the land. Often, while working with American Indian and Alaska Native landowners, a glimpse of indigenous wisdom about taking care of the land is shared. Sometimes these ISMs are explained in great detail. Perhaps the land owner/manager wants to utilize that method within the NRCS conservation plan; perhaps the NRCS planner wants to help make that happen. This guide will help those individuals accomplish that goal.

ISM and NRCS Conservation Practice - Burning

Fire is a tool that was used by indigenous peoples of the Great Plains and Western United States before European contact. By burning grasslands, they ensured sustainability of the grass, the bison, and thus of themselves.

The tall, mid, and short grasses that made up the Great Plains benefitted from the fires that kept shrubs and trees from outcompeting them. The fires consumed the previous year's growth and deposited ash, both which allowed an increase in soil temperatures. Any shrubs or trees trying to establish and compete with the grasses were killed by the fires. The nutritious, new growth that followed the fires attracted the herds of bison that roamed the plains, providing quality forage to not only the bison, but to other inhabitants of the plains as well. The bison would seek out and find these lush green areas amid a sea of older, less palatable and nutritious grass; indigenous people would find the bison who in turn, gave some of themselves to the people. Through the use of fire, the grassland habitat, animals, and people lived in harmony on the Great Plains.

When European immigrant settlers came to the Great Plains, they found fertile soils and settled them, breaking up the vast sea of grass. In their minds, fire consumed and destroyed, and was avoided with efforts made to prevent and extinguish them. The great bison herds were exploited and disappeared, and indigenous peoples were fought and forced to stay on reservations. The harmony of the Great Plains ecosystem was gone. Shrubs and trees encroached into the areas once covered by the sea of grass, and eventually people saw the value of the disappearing grasslands as important habitat for wildlife and for grazing domesticated animals. Universities studied and researched ways to manage the grasslands to keep them productive and healthy. Eventually they looked at the way the indigenous peoples lived before reservations, and studied and researched based on what they learned from the old way of life. Now they have come to the conclusion that fire is the best tool to keep the grasslands sustainable.

NRCS has "prescribed burning" as one of the many practices in the conservation planning process. We have borrowed indigenous wisdom in using fire, and we thank indigenous peoples for this knowledge.

Karin Sonnen, NRCS Range Management Specialist

CONCEPTS AND CONSIDERATIONS

CONNECTIVITY - WE ARE ALL RELATED

Everything is connected: living and non-living things, air, land, water, animals, plants, humans, our ancestors and the future generations, things we cannot see and things we can see, spirits and the creator, the way we act and the way we treat the earth and other human beings. IK is grounded in the human realization that the life surrounding us can teach us valuable life lessons, if we pay attention to our relationships and interactions with the land, air, water, and all other living beings. IK has evolved through hundreds and often thousands of years of interaction with ecosystems and larger environments. Indigenous peoples take into account the connectivity of all.

“We are connected to the land and to the animals. In spirit, we are one. Our ties with the land and animals help us survive. Listen and feel for the ancestors’ guidance. We are all connected.” This is the description by indigenous artist Andrew F. Abyo on the NRCS 2009 American Indian and Alaska Native Heritage Month poster.

In some North American indigenous creation stories, the galaxies and Mother Earth were created. Next the plants and animals were placed on Mother Earth to care for people. Then the people were placed on Mother Earth to care for Mother Earth and the plants and animals, creating the Circle of Life. The Circle of Life is shown in the figure below by Louie Dick, Umatilla Elder on the AIANEA Elders Council.

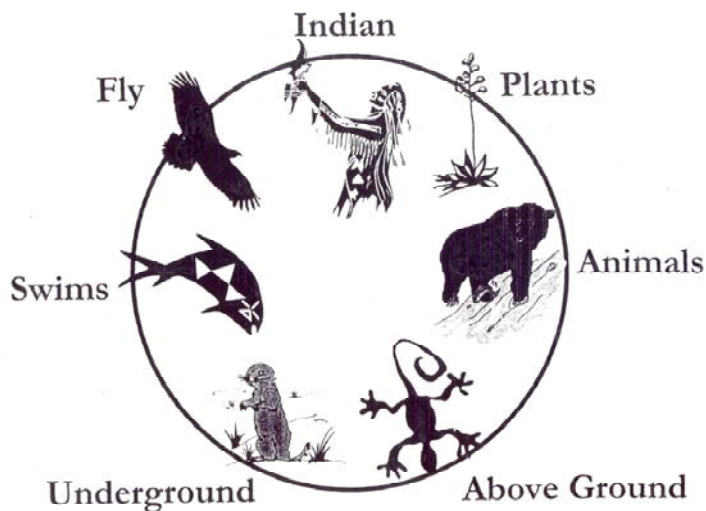


Figure 3 The Circle of Life by Louie Dick, Umatilla Elder (Caring for Mother Earth)

What NRCS and Tribes can do through this guide is to connect the way of NRCS conservation with the way of ISM, and this can be illustrated by imagining a tightly woven web of ^{vi} ideas and resources; experience, wisdom, cultural values, traditional and customary uses, ISM, science, Tribal policy, NRCS tools, and NRCS policy through positive NRCS-Tribal relationships and consultation (See Figure 4 below).

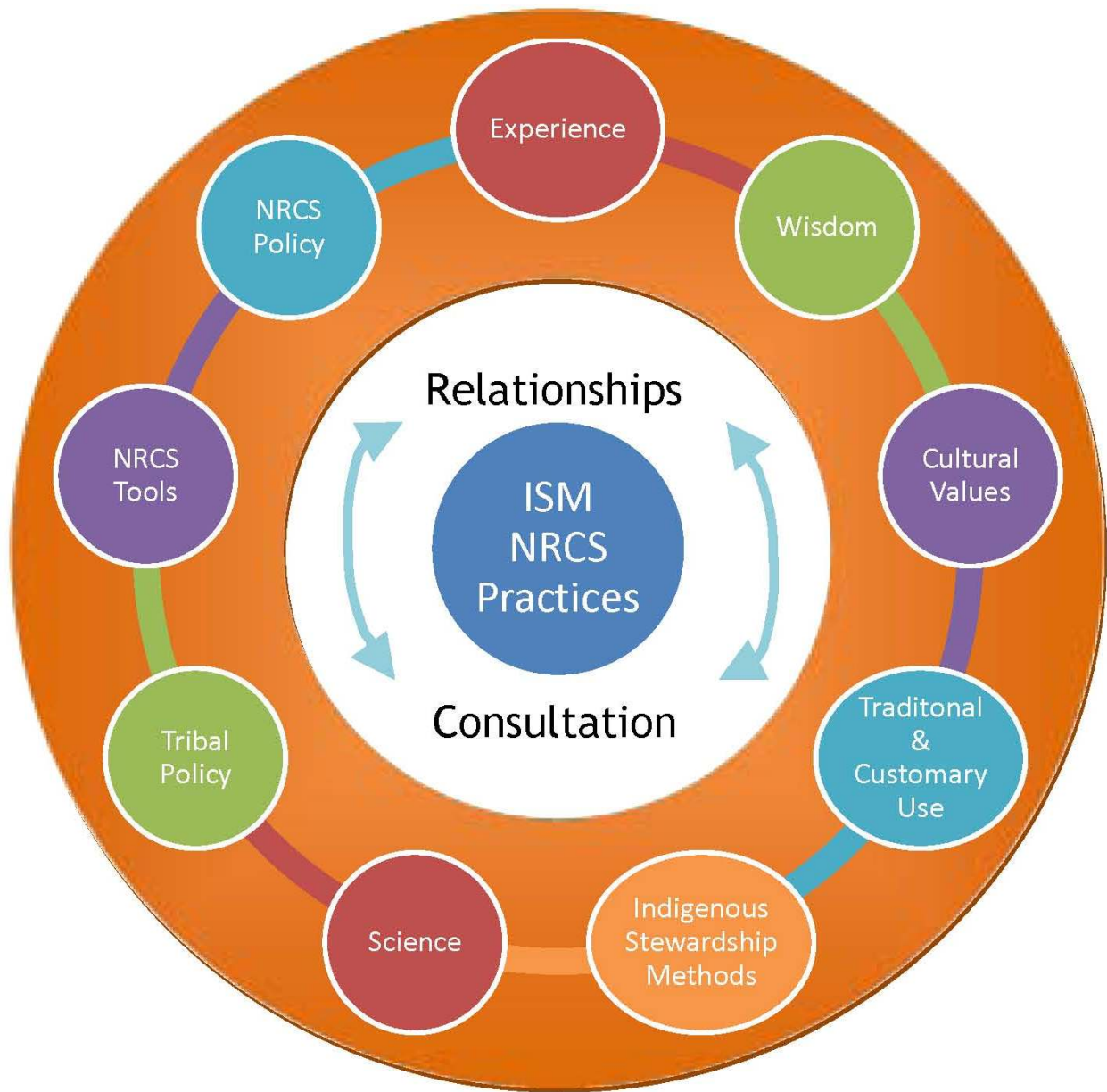


Figure 4 Inter-connectedness between NRCS and Tribes achieved through relationships at the local level and by Government-to-Government consultation. In NRCS, consultation occurs at the State/area and national levels (State Conservationists are the senior officials within their States in NRCS).

EXPERIENCE

Like the expression, “a picture is worth a thousand words,” perhaps experiences are beyond words, and immersion is the best way to learn something. If you are an NRCS planner, immerse yourself in the experience of the ISM (the exploration of new knowledge and technologies must not overlook the knowledge and technologies that reside in the Tribal ways of living). If you are a Tribal member, immerse yourself in the NRCS policies and tools. Larry Mercurieff exemplified this discussion with, *“NRCS people need to be immersed in a cultural setting for a summer or several summers. The Tribes could invite NRCS to come, stay, and do a field trial or pilot study for mutual benefit: 1) Tribe’s benefit is getting compensated for their knowledge, and conservation practices, 2) NRCS’ benefit is defining what the resource concerns are and learning new conservation practices.”* In addition, all agree that Tribes and Government need to do a better job at educating each other. Larry Mercurieff also suggested that, *“We need to inform and educate at all levels, and we need to consider the cost, time, and energy of doing that.”*

WISDOM

Acknowledge and accept that there is wisdom in the traditional knowledge of indigenous peoples, and wisdom in NRCS conservation practices through critical thinking, knowledge sharing, and experience. Larry Mercurieff stated, *“Knowledge without wisdom is useless, even dangerous. Wisdom requires critical thinking a methodology to carry out the practices.”* There are many dimensions to knowledge, including this critical fore-thought, a planned method, experience, and associated values that have been learned through generations. Orville Huntington, Indigenous Athabaskan advisor to NRCS, biologist, and rural Alaska leader said, “a lot of wisdom comes through intuition while on the land.” The combination of both methods of thinking and intuition lends itself to a more productive understanding and collaboration. Do not simply go through the motions, but take your time building a relationship, gaining experience with the ISM, listening to the Elders, and thinking about the connections. Work through your trust issues!

CULTURAL VALUES

When discussing ISMs, be clear about the cultural values and teachings associated with the practice. Be absolutely open and honest with each other. Values might include spirituality, respect, honor, relationships, family, experience, wisdom, language, humility, reciprocity, sharing, and more.

Consider these quotes by indigenous Elder consultants who helped write this guidebook: Ida Hildebrand, Koyukon Athabaskan, said, *“The time for secrecy is over because of the state of mother earth. We have to share this information.”* Larry Mercurieff, Aleut, said, *“Values inform and guide. These values are set up for a particular purpose through time. Think about this very critically and apply the local dimensions as that comes out.”* John Stensgar, Colville Tribal Member, emphasized, *“Values are in the practices for a reason - they were historically done that way. The standard has to mesh with the traditional practice. If it doesn’t, consultation should begin.”^{vii}*

Language is a cultural value and also a topic unto itself. Indigenous languages capture many values that are difficult for Elders to articulate in English. It is important to have a translator who can relay this information to NRCS employees. In meetings, ask if someone in attendance can interpret the statement to English. Indigenous advice recommends at least two different people translate - a relative of the indigenous speaker and a government employee who understands policies, if possible.

Be aware of obstacles to learning cultural values. As District Conservationist on the Navajo Nation, Jerry Gilmore explains, "The older generation do not openly share the traditional perspective. Only when we mention that Navajo beliefs can be used as a tool to protect, improve, and maintain the natural resources do the Elders agree with our approach. For instance, when we explain SWAPA and inform them about the methodology we use for SWAPA, they have a difficult time understanding. The older generation can relate to the 'big' picture of why we are trying to help the land when we inform them that the main purpose is to revive and restore the land. They understand that all creatures - man, animals, birds, insects, reptiles, plants, water, and air are integral to make improvements to the land. When we explain our methodology by mentioning all creatures, they begin to understand."

TRADITIONAL AND CUSTOMARY USE

Indigenous peoples have traditional and customary use areas beyond legal descriptions and boundaries. These areas are cultural resources. Some examples are gathering places for foods and raw materials, spiritual use areas, air, water, rock, and soil formations, plants, trees, ceremonial use sites, Tribal trade sites, home use sites, and seasonal camp sites specific to each Tribe^{viii}.

Tribal people have an intimate knowledge of their local and general environment that has been developing since time immemorial. Cultural resources are varied, including objects or sites that are considered to have significant cultural or historic value to the people. It is not uncommon for cultural resources to have private, ceremonial, sacred, and/or spiritual qualities that might require confidentiality for their protection. (Also see glossary.)

INDIGENOUS STEWARDSHIP METHODS (ISM)

ISMs are the ecologically sustainable use of natural resources within their capacity to sustain natural processes, while honoring the wisdom of past generations, and ensuring that the use does not diminish the potential to meet the needs and aspirations of future generations. ISM is perhaps a subset of **Traditional Ecological Knowledge (TEK)**, in which indigenous peoples acquired the knowledge base over hundreds of years through direct experience and contact with the environment. ISM is the physical, spiritual, mental, emotional, and intuitive relationship of indigenous peoples with all aspects and elements of their environment.

These relationships include, but are not limited to, a combination of knowledge, experience, tradition, places, locality, all living and nonliving things, skills, practices, theories, social strategies, moments, spirituality, history, heritage, and more; and may not be fully embraced by people who fail to understand all those dimensions. Yet, ISM can be applied to contemporary resource management, even in a bureaucratic agency whose goal is to help

people help the land. The use of ISM is encapsulated in the following quotation from *OUR COMMON FUTURE*, the report of the World Commission on Environment and Development:

“Tribal and indigenous peoples’...lifestyles^{ix} can offer modern societies many lessons in the management of resources in complex forest, mountain and dryland ecosystems... These communities are the repositories of vast accumulations of traditional knowledge and experience that link humanity with its ancient origins. Their disappearance is a loss for the larger society, which could learn a great deal from their traditional skills in sustainably managing very complex ecological systems.” (World Commission on Environment and Development, 1987)

A modern example is the Menominee Nation’s sustainable hardwood forest of Wisconsin, and an ancient example is the Hohokam Nation’s canal system in Phoenix and around Arizona. Nils “Buster” Landin, Sharing the Land Coordinator at Purdue University’s Department of Agronomy, explains “The Menominee Nation of Wisconsin on their lands has one of the best managed and truly sustainable hardwood forests in the country. Their land is managed on the principles driven by their culture and cultural values and it is managed not just for human use but managed on a greater than human timescale for all organisms.” The Hohokam people of the desert Southwest developed an irrigation canal system so well thought out that it is still in use today over 700 years after it was finished (Wildcat, 2009).

Hopi Example and Perspective of Indigenous Stewardship Methods

By Stewart Koyiyumptewa, Hopi Farmer and Blythe Koyiyumptewa, Hopi, NRCS Engineer

On Hopi, rangeland practices for ranching are the majority of the work that NRCS assists with. However, ranching is a relatively new concept to Hopi. We were built to farm (dry farm) and that is what our culture has always been based on. Keep in mind that our way of thinking is pretty basic and simple. I think NRCS is doing a good job in this ranching aspect for Hopi, although most Hopi people do not ranch. The bulk of natural resource stewardship and survival is dry farming but NRCS programs are not set up to help dry farmers. I think this is lacking, speaking only for Hopi.

In working with some Hopi people as a student intern (way back when) and having discussions about plants, farming, gathering, cultural practices, etc., there is one teaching always in the forefront in my mind: “Only take from the land what it is willing to give.” Never take more and always give back in some way. Most native people know and understand this concept. Dry farming is an age-old practice that Hopi people have used as subsistence for culture and survival. We do not sell our crop for profit because it goes against who we are and against the covenant we made with Māasaw, who is the Caretaker of this Earth. We were not given permission to take from the earth for personal gain and, therefore, our yields are not that of big farming corporations who are for profit. Right now, most Hopi farmers do not see that

NRCS can do anything for them because most Hopi farmers do not irrigate. There is not a more efficient system that can be installed because there is no system. NRCS needs to recognize this important concept that things can grow without irrigation but that there are still natural resource concerns associated with dry farming that need to and should be addressed. I hope NRCS can honor those that do not irrigate. From my perspective, dry farming is a more efficient way to farm while also implementing thousands of years worth of techniques and experience for natural resource conservation. Maybe a simple way for NRCS to help is to assist with providing field fences for farm fields, which in a sense is "use exclusion" because it helps to keep livestock and wildlife away from fields.

Erosion is also a concern for Hopi dry farmed fields. Farmers literally plant their crop, their fields, in drainages and washes in order to capture any runoff from rain that may bless the earth. Sometimes this is a two-edged sword because if it does rain in larger amounts than what is common for our arid land, the rain and runoff will literally destroy crops and fields in whole or part. Sometimes small gullies are also a result, and it is up to the farmer to operate and manage this with his own means. Sometimes it is detrimental enough that the farmer has had to literally go stand each corn stalk up one by one, in hopes that they are not root soaked or too damaged that they will survive. Our Hopi corn seeds have been passed down from generation to generation, year to year, that they only know how to grow on our soil, with the limited water, planting root depth (sometimes 1 to 2 feet deep), climate, and all the considerations that Hopi dry farming entails. Farmers plant enough seeds to feed the worms, rabbits, squirrels, mice, and other critters and hope that a few seeds will make it through the soil to finish growing. Even then it is not an easy battle against crows, deer, bear, and other animals that inhabit the area. At some point, the farmer has to go thin out some leaves in order to leave just enough growth based on the moisture in the soil and the hopes and prayers for more rain to come. The corn leaves taken out do not go to waste. We collect the fresh leaves, dry them, and then bring them back to life by water for use in preparing different Hopi foods. If the corn should make it to harvest in the fall, the naturally dried corn leaves are saved and used for preparing Hopi foods again. We do not waste any resources.

One other thing that comes to mind is that Hopi are the original "no-till" farmers. Stewart does not till the land at the beginning or the end of the farming cycle. By tilling the land before he plants, he would be allowing precious moisture to escape from the soil and encouraging soil erosion from spring winds. By tilling at the end of the growing cycle, he would be increasing the risk of soil erosion until the next planting season because of loose soil. By practicing "no-till," he is allowing the remains of the corn stalk to serve as a cover for the precious soil. Another practice that Stewart uses is to plant his seeds in set rows one year and then plant in the in-between rows the following year. He doesn't use the same rows from year to year, so that the soil takes a break while keeping all of the soil active in farming.

Everything received from the earth is always received with thanks to all living things. It is not the farmer alone who grows the plant. It is the wind and animals that help to pollinate; the sun that gives warmth for growth; the rain that gives moisture for growth; and the farmer's and people's heartfelt prayers for just enough food to survive. It is all things. Every prayer we do is for moisture and a good life for everyone. I think for the Hopi people, we are blessed to have limited water, no irrigation, because that helps us remember that we must keep a prayer in our heart for moisture in order to survive. In other words, having water is hard work.

The farmer I speak of, my husband, said, "As a Hopi farmer, we sow the seeds and then we pray." I guess it is as simple as that.

SCIENCE AT NRCS

NRCS utilizes the scientific method to find the best solutions to "resource concerns" through science as it is taught from grade schools through graduate schools throughout the world. It uses linear thinking to answer a question through observation, hypothesis, building and testing, experimentation, analysis of data, and stating a conclusion. The method is conducted more than once by numerous scientists to ensure accurate results. For 75 years, NRCS used a cumulative and ongoing process of experience and refinement of science and consultation with farmers and ranchers. Some of NRCS' conservation practice standards are scientifically tested. Some, however, are developed with historical knowledge through pilots, demonstrations, and initiatives, including unacknowledged indigenous practices, such as burning and nutrient management. Standards are modified over time as new technology, information, or theories are tested or proven by practitioners. NRCS is considered a learning agency because we allow these changes to occur in our conservation practice standards as we learn new things. Eugene Schock, NRCS Resource Conservationist, said, *"In the past, NRCS has always been science-based. Now there is a deeper level of insight which is very helpful and can be used in a positive way."* (See Eugene's story on pages 20-21.)

NRCS TOOLS

The tools and resources available to NRCS conservation planners and our clients seem endless. We strive to continue to build upon this arsenal of tools, including the addition of this guidebook.

- Field Office Technical Guide (FOTG) - <http://www.nrcs.usda.gov/technical/eFOTG/>
- National Handbook of Conservation Practices (NHCP) - <http://www.nrcs.usda.gov/technical/standards/>
- Technical Notes - <http://199.134.172.30/or/technical/ecs/plants/plants-technotes.html>
- Job Sheets - <http://www.nrcs.usda.gov/technical/Standards/nhcp.html>
- Conservation Practice Physical Effects - <http://www.nrcs.usda.gov/technical/standards/nhcp.html>
- Technical Directives - <http://directives.sc.egov.usda.gov/default.aspx>
- Technical Handbooks - <http://directives.sc.egov.usda.gov/> (Handbooks)
- Manuals - <http://www.mt.nrcs.usda.gov/about/directives/manuals.html>
- General Manual (GM) Policy - <http://directives.sc.egov.usda.gov/> (Click on General Manual)
- National Technology Support Centers - http://www.nrcs.usda.gov/about/organization/cent_inst.html
 - West (Portland, Oregon) - <http://www.nrcs.usda.gov/about/ntsc/west/index.html>

- Central (Fort Worth, Texas) - <http://www.nrcs.usda.gov/about/ntsc/central/index.html>
- East (Greensboro, North Carolina) - <http://www.nrcs.usda.gov/about/ntsc/east/index.html>
- Training Courses - <http://www.nedc.nrcs.usda.gov/>
- Soil Web Survey - <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>
- Water Climate Centers - <http://www.wcc.nrcs.usda.gov/>
- Plant Guides - <http://plants.usda.gov/java/factSheet>
- PLANTS database - <http://plants.usda.gov/>
- Plant Materials Centers - <http://plant-materials.nrcs.usda.gov/centers/>

TRIBAL POLICY

Each Tribe is governed by its own set of laws, policies, codes, and elected officials. Every Tribe is different. Ask questions about these Tribal policies to gain awareness, so you can be respectful of them.

NRCS POLICY

NRCS policy provides guidance on providing conservation technical assistance, along with carrying out conservation programs and their delivery. By working through the process already available in NRCS, the ISM can be honored and utilized in conservation plans and in the Farm Bill programs. This process is outlined in the steps of the GM and NHCP.

LAW

Today Tribes retain remnants of the original Government-to-Government recognition manifested in the treaty negotiations and the first Acts of the newly formed American Government toward the indigenous inhabitants.^x

Contemporary assertion of Tribal sovereignty is manifested in “Tribal law” which is drawn from a Tribe’s traditional customary law, Tribal belief systems, and other forms of Tribal governance, including ordinances, Tribal constitutions and councils. It reflects not only substantive legal principles, but also the cultural context from which they evolved.^{xi} Through Tribal law, indigenous governance of cultural property, and traditional knowledge specific to the works Tribes seek to protect, consistent with the community’s values and beliefs.

Tribal codes may reflect the relationship between Tribes and the earth, even if a Tribe is no longer living in its aboriginal territory. Most Tribes share a common belief that the earth is sacred.^{xii} Thus, Tribes may choose to protect their sacred places in Tribes’ codes even if, for culturally mandated reasons, they elect not to delineate them in detail.^{xiii}

1. Traditional Areas - Tribes have acquired land through aboriginal title, treaties, executive orders, Acts of Congress, and purchase.^{xiv} “At the most basic level, the land sustains subsistence hunting, fishing and gathering, on which some tribal people depend for their daily food.”^{xv} Additionally, “the land also gives rise to the origin of stories, societal norms, governing patterns, and spiritual practices that bind the tribal individuals together”^{xvi} in an intimate connection to the land.

a. Protecting Tribal, Traditional, and Customary Places

Tribes have few options to protect their land and traditional and spiritual lifeways. As a trustee, they have some protections afforded them through the Federal Government. This includes obligations derived from treaties, Executive Orders, statutes, and court precedent. In addition, Federal and State agencies can develop policy, programs, and other guidelines that favor sacred site protection.

b. Protecting Spiritual, Cultural, and Medicinal Places

A majority of Tribes enacted desecration statutes that emphasize the protection of places of religious or historical significance, as well as places of archeological interest; both Tribal and Federal statutes focus on safeguarding tangible objects and physical places, such as Tribal flags, monuments, subsistence areas, and religious and sacred sites.^{xvii} Yet a Tribe's code may be interpreted as preserving the ceremonies or practices associated with gathering the natural substances, and not merely substances themselves.^{xviii}

RELATIONSHIP

A working relationship between NRCS and a Tribe requires an enhanced form of communication that accentuates trust, respect, honesty, and shared responsibility. There must be enough trust among both parties to share information freely and openly in order to come to a common understanding and comprehension. *"This relationship is essential in a process to result in positive collaboration and informed decision making."* (Justine E. James, Quinault) A new edict must evolve that NRCS and Tribes are to encourage the customary use of biological resources in accordance with traditional cultural practices. Face-to-face meetings are more effective than telephone or computer communication. Efforts to meet on the land and discuss thoughts in person and multiple times must be made by both parties. (Note more explanation about this concept can be found in the steps of the process below.)

TRIBAL CONSULTATION

The "who, what, why, when and how" of Tribal Consultation:

Who: Sovereign Nations - Tribes

Indian Rights and Laws that define why Tribes are different not only culturally but legally

- Identify the factors that determine land status
- Recognize the areas and limitations of jurisdiction

Why: Trust Responsibility

The Federal Government must work with Tribes

- USDA/NRCS policies regarding Trust responsibility and sovereignty

What: Government-to-Government

This is the kind of relationship the Federal Government has with Tribes

When: Affects Tribes and Tribal Members

Anytime there may be a direct or indirect effect on the Tribal sovereign nation and its members

How: Consultation

The process in which Tribes and Federal agencies develop together

- i.e., Cultural resources, planning, review of policy, standard and specification

The Federal Government maintains a trust responsibility with Tribal nations, including a Government-to-Government relationship. This relationship is a legal relationship between nations as stated in the Constitution and enforced by presidential executive orders by former President Bill Clinton and President Barack Obama as a mandate, not an option for Tribal consultation. This high level relationship means that agreements and stipulations by each party must be consensual at the highest-possible level in each of the two governmental structures. Consultation is an ongoing conversation. Ida Hildebrand explained that *"this is a dialogue, not two monologues."* Some Tribes require consultation before they will consider working with the Federal Government. John Stensgar, Vice Chair of the Colville Tribe, said *"Consultation with every Tribe should be different,"* and added, *"Be aware of who you're consulting with - they need to be appointed by or approved of at the Tribal Council level."* Sarah Bridges, NRCS National Cultural Resources Specialist, pointed out that, *"Consultation can be initiated by either a Tribe or the Federal Government - too often agencies take the position that only the Federal Government may initiate Government-to-Government consultation."* The NRCS National Cultural Resources Procedures Handbook (NCRPH) (<http://policy.usda.nrcs.gov> NCRPH Title 190, Part 601) explains the need to build a culturally acceptable chain of communication based on respect and long-established Trust and trust relationships. This is an excellent reference on consultation for NRCS employees.

Arrow Coyote, Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians Cultural Resource Protection Coordinator, pointed out that "it is important to make a follow-up phone call to make sure the information got to the right person and in a timely fashion, as Tribal staff are inundated with mailings."

OTHER ITEMS OF CONSIDERATION

SPIRITUALITY

If you feel stymied by the concept of a spiritual connection within the context of the ISM, acknowledge it in your documentation.

Orville Huntington: *"Science is a knowledge base that has a spirit."*

Ida Hildebrand: *"There is a spiritual connection to the knowledge and it is intimately connected to everything. There is an inter-relatedness of the entire ecosystem, and it is in constant presence of the spirit. Please know that there is a distinction between spirituality and structured religion. In this context, just be aware of the practice and ask respect of it."*

Larry Mercurieff explained: *"The land has a vibration. Our ancestors took this vibration and turned it into our language. This is the gift of earth; we are connected to the land (in many ways, one of which is our language)."*

STARTING NEW FROM A DIFFERENT PERSPECTIVE

A revelation occurred at NRCS as a result of the NRCS/Native Work Group dialogue. There may be an opportunity to make changes to existing conservation practice standards. There may also be opportunities to create entirely new NRCS conservation practices based on the knowledge that exists in ISMs. Have an open mind to both options. Consider starting with a blank sheet of paper (instead of sitting down to fill out numerous forms and working from existing templates).

Story about Differing Perspectives

Following is a description of my personal experience in growing up and working in North Dakota for NRCS for 25 years, then moving and working in Alaska for the past 5 years.

I grew up on a crop and livestock farm in southwest North Dakota. I was one of 9 children and we had every kind of livestock and many different crops. Something was always out of the fence and there was always at least one piece of broken down machinery.

My recollection of farming since I was old enough to remember was we tried to produce as much as possible on each crop field. Hard Red Spring Wheat was the king of all crops in North Dakota, and whoever produced the most bushels per acre was the revered and respected farmer in the neighborhood. More bushels meant more dollars and more dollars meant better machinery, better equipment, better barns, and a better life. Better machinery was usually also bigger machinery. So the goal was to raise the most bushels of wheat, have the biggest tractor, the largest cultivator, and live as the most revered farmer in the area.

To get the most bushels you had to add commercial fertilizer and use chemical pesticides to control weeds. The goal was to kill everything that was not wheat in the field so nothing would rob nutrients and moisture from the wheat crop. This was basically true of all crops or livestock being produced in North Dakota or anywhere in the Midwest. Getting the most from the cropped or grazed area was always the goal.

Production agriculture was understood by me as well as most everyone in the State as producing the highest possible amount of bushels or pounds from the acres you had to work with.

With this knowledge and mindset I moved to Alaska, where I presumed agriculture would have similarities to what I knew in North Dakota. How strange it was for me to be introduced to a way of life called subsistence where living off the land meant living in harmony with the land and animals. Nothing was out of the fence because there was no fence. Tractors were not broken down because there were none. Producing the most of one thing was unheard of because nature produced many plants all in the same field, only there was no field. You did not need to kill things with chemicals because you were not trying to raise just one crop. You did not have to worry about producing the most bushels possible because you let nature take care of producing plants and animals, and you needed only to work with nature not to overuse the plants and animals in an area.

Goals and objectives of the landowners were dramatically different because the whole way of thinking was different. What I had been taught growing up was not the only way to do things nor necessarily the right or best way to do them.

For many Alaska Native Tribes and/or Villages there is a strong desire to preserve and maintain the subsistence way of life. Not just to provide food, clothing, tools, shelter, etc., but to preserve important beliefs and values of their culture. Producing the most possible product from an acre is not at all the goal. Living and working in harmony with nature, however, is very important.

Production agriculture performs a very important function in providing food and fiber for the world. The importance of this role should not be diminished, and production should always be done in a sustainable manner. Neither production agriculture nor the subsistence way of life is right or wrong - they are simply a differing approach.

As I have discovered, it is critically important to set aside personal opinions and experience when beginning the assistance process with clients. Understanding their goals, beliefs, and values will be critical in truly providing any kind of help to them.

Eugene Schock, State Resource Conservationist, NRCS, Alaska

TIME

Be respectful of the other person/Tribe/agency timeline. Be patient and tenacious. If it has been months since the idea was discussed, that does not mean they are finished with it, nor should you give up. Your patience and persistence will ensure your success.

INTELLECTUAL PROPERTY RIGHTS

Today cultural property is defined as “the tangible and intangible effects of an individual or group of people that define their existence, and place them temporally and geographically in relation to their belief system and their familial and political groups, providing meaning to their lives.” “Thus, indigenous peoples’ claims to cultural property include not only places and objects (and all other physical materials of a particular culture), but also traditional histories that are connected to the group’s cultural life, including songs, rituals, ceremonies, dance, traditional knowledge, art, customs, and spiritual beliefs.”^{xix}

Traditional knowledge or ISM can be cultural/intellectual property. So, who owns the intellectual property? Any number of options for NRCS and Tribes exist and they will be determined through a mutual understanding brought about by consultation. The Tribe may choose to share all of their knowledge so that others may benefit; they may choose to share some; they may choose to share none at all. Tribal codes can also be written to stipulate how that knowledge will be protected. It is NRCS’ responsibility to honor those codes on a trust level between the Tribal government and the Federal Government.

Be aware that rules of sharing knowledge vary drastically between Tribes and can impact communications. The purpose of this guidebook is to share knowledge. Yet before you can share knowledge effectively, you need to know why you want to share or obtain it.

Cooperator- or site-specific ISMs should be discussed with the landowner on-site, with that documentation being retained in the person's case file. Documentation of ISMs beyond the cooperator- or site-specific method could reflect a broader set of cultural rules, norms, and constraints that become part of the FOTG, whether State-specific or national version. If interviewing to collect knowledge for broader purposes, tasking this at the area, State, or regional level would make sense. Remuneration to the Tribe may be possible at those levels.

Where ISM documents should be kept: If the Tribe wants to produce something beyond site-specific ISMs, these documents could become part of the respective States' manuals, handbooks, and/or FOTG, and/or held by the respective Tribal councils (with access by the agency as-needed). It could also remain in the respective field office where it is needed and dissemination can be better controlled.

When asked whether these ISMs should be shared if the result is someone else (i.e., production farmers) making a profit from this knowledge, the indigenous Elders' responses were mostly in favor of sharing the knowledge. However, at the very least, there needs to be formal acknowledgement of where the information comes from. Tribes are not necessarily asking for remuneration, but credit should be explicit for the knowledge that was handed down from generations. Additionally, whether or not profit can be gained from this information needs to be made clear at the outset of collaboration, so the indigenous peoples are properly informed to make a decision on whether or not to share any particular piece of information.

Ida Hildebrand said, *"There are many people who do things in a good way, yet, once it goes to press, the message changes. People read it from their own beam of light. Many will benefit and some will take it the wrong way. I choose to believe that most people will use it in a good way."*

Marie Meade said, *"Putting all of this into English words is hard to do. Spirituality is an experience; there is no word for that in Yupik. Everything that you do is in respecting the air, the water, the land, everything. We belong to the land. When you're out doing these things, it's an honor to do them. To write them down is to take away from the historical practices."*

Ida Hildebrand added, *"It's OK to take these ideas and make them your own, it's sort of like value-added; it benefits many. Do it in a good way, with dignity, integrity, with honor, with honesty."*

Larry Mercurieff made the point, *"Credit needs to be given wherever NRCS utilizes the knowledge gained from American Indian and Alaska Native people in the standards, notes, articles, and policy, including the knowledge first learned when Europeans landed here and began learning from the first people."*

John Stensgar added, *"What we print is for the betterment of the earth, for all. To acknowledge this is to choose and to hope to be in a better place."*

PART II: NRCS CONSERVATION PRACTICES

NRCS conservation planners are trained to use the 9-step planning process outlined in the National Planning Procedures Handbook (<http://policy.usda.nrcs.gov>, click on Handbooks). The process allows the planner and landowner/manager to agree on objectives, resource concerns, analyze alternative practices, and choose and implement the best conservation system. It is not a linear process, and it allows flexibility on the part of both the planner and landowner/manager. An integration of ISMs into the process outlined in this section is the objective - actively carrying out the planning process while simultaneously working through the following steps would be optimal.

STEPS TO INCORPORATE INDIGENOUS STEWARDSHIP INTO NRCS CONSERVATION PRACTICES

Step 1: Establish Rapport and Listen

Step 2: Gather Information

Step 3: Follow the Correct NRCS Processes

ESTABLISH RAPPORT

Building rapport with indigenous peoples happens gradually and requires sustained effort to be sensitive to cultural values. It goes beyond sending an email or a letter asking for input on a project, policy, or rule, or simply being invited to a meeting. The most cherished forms of communication among many Tribes are face-to-face visits. Direct interactions establish the grounds for mutual respect. Being too assertive may slow down the process of building rapport or if one asks too many questions, talks too rapidly, or does not allow silence for reflection on what is said. Many indigenous people are taught to avert eye contact because looking into one's eyes is a power thing. Native people mostly feel more comfortable looking away or to the side of one's face or eyes because that is a sign of respect.

Understanding the history, culture, and organization of the Tribe through reading background documents, prior to interviewing, is very helpful. The information received is confidential and to quote it in articles or reports and share it with others requires permission.

Unpublished reports and articles generated from interviews are copied and given back to the indigenous participants and Tribal councils.

Keeping an open mind to new ideas and different views of the world is paramount. Respect is fostered by taking an earnest interest in native lives, giving voice to indigenous concerns, and assisting Tribes in the maintenance and restoring of cultural traditions, if that is their goal. Creating long-lasting relationships is as important as any exchange of information. Also remember, your (government) ways are not their ways, and their (indigenous) ways are not your ways. Patience is needed!

LISTEN

Effective listening - empathy - is to listen with an open heart and with both sides of your brain. Often we are listening while trying to think of a response. Dialogue involves being a good listener as well as talking. "Listening without an agenda is true listening," says Larry Mercurieff, Aleut. Communication protocol training, combined with indigenous cultural protocol training for NRCS employees, is available and highly encouraged in order for the employee to be more effective (i.e.,: "Working Effectively with American Indians" or "Working Effectively with Alaska Natives", National Employee Development Center training). Another source of training is the "Another Culture, Another World" DVD series by Father Michael Oleksa. After these conversations occur, jot down notes.

GATHER INFORMATION

Many indigenous people are working actively to preserve their cultural heritage and ethnic identities. Below are some of the ways that NRCS and Tribes can work together to pursue traditional knowledge for the perpetuation of native traditions and taking care of the earth. If you need help with information gathering, work through your state office to locate points of assistance from technical specialists, cultural resource coordinators and specialists, tribal liaisons and others.

Methods used to record and return IK about the natural world include: (A) Oral Interviews, (B) Literature Reviews, and (C) Analysis of Collections in museums, heritage centers, research and curatorial facilities, repositories, etc.

A. Oral Interviews

Indigenous Elders hold much knowledge about the natural world, and in what plants, animals, and fungi are now missing from various landscapes. They also remember former stewardship techniques that their grandparents or parents applied to landscapes or are continuing these practices.

Two types of interviews are utilized: (1) qualitative, loosely structured interviews that guide the respondent to talk freely on suggested subjects; and (2) highly structured interviews that involve the design of a questionnaire with a cluster of specific questions surrounding particular topics. If permission is granted by the respondent, both kinds of interviews would be recorded with a tape recorder and the tapes transcribed. A reference collection of photographs can be assembled for respondent identification and recall of harvesting, management, and use information. This is extremely helpful in substantiating and enriching information gained from oral interviews. Additionally, visits can be made to different sites when interactions between native people and plants are witnessed firsthand. This is called "participant observation" and indigenous people are asked to identify plants in the field and their particular uses, harvesting, and management.

B. Literature Reviews

Ethnographers, explorers, missionaries, and early settlers wrote detailed accounts of indigenous life and plant material culture in different regions. Much of this information is housed at libraries (public and Tribal), museums, historical societies, and government

archives across the country. This material is not always in forms that are easily accessible to indigenous people or NRCS field offices (e.g., technical journals; monographs and other publications; unpublished manuscripts; microfilm; and on notecards). However, some of these materials are available through the Internet (through such services as JSTOR) and shared databases; the problem is how to locate these services and tools. Additionally, drawings, photographs, herbarium collections, and maps provide valuable information in the depiction of landscapes at the point of Euro-American contact.

Specific ethnographic studies also were conducted on certain aspects of native cultures such as language, kinship, ethnobotany, and mythology. For instance, tremendous corpuses of ethnobotanies, which describe the plant uses of specific Tribes, have been published for Tribes in California. Also, the Federal Land Patent Office (U.S. Department of the Interior-Bureau of Land Management) has 19th and early 20th century field notes and maps containing basic data for all States but the original 13 colonies.

There are many published and unpublished books, articles, magazines, journals, and reports authored by American Indians that provide invaluable insights into indigenous perspectives and knowledge about nature and their relationship to it.^{xx}

C. Analysis of Collections in Museums and Research Facilities

A wealth of ecological knowledge about our human past and historic landscapes in the United States is embodied in the natural history, tribal heritage and research centers and anthropological collections that are housed at many museums, research and curatorial facilities, heritage centers, and tribal repositories throughout the country. These collections include: (1) tools, baskets, clothing, arrows, hunting weapons, fishing and herding gear; (2) pounded acorn flour, basketry coils of split branches or rhizomes, and scraped basketry sticks; and (3) the raw plant materials such as seeds, fruits, leaves, mushrooms, and insects. These collections, unpublished and published field notes, and oral interviews provide information useful to indigenous people and are relevant to the reconstruction of historic landscapes, historic land uses, and identification of species used in the past.

Studying various museum collections can also explain former sustainable indigenous harvesting strategies and stewardship techniques, providing information that is highly relevant to the conservation of biological diversity and the restoration of ecosystems and cultural traditions.

USE CORRECT NRCS PROCESS

You have now worked one-on-one with a knowledgeable individual and have gained knowledge of an ISM. Should you simply incorporate the cultural intricacies into the conservation practice specifications, incorporate the cultural details into an existing conservation practices standard, or should you go as far as pursuing a new interim or conservation practice standard number? Decide where the practice fits in NRCS through the Dichotomous Key (in the blue box, below) and follow the procedures for the relevant place. All instances should include two very important processes: (1) Consultation with the Tribe, and (2) Testing and evaluating the ISM.

1. **Consultation with the Tribe:** For guidance and references, see the Tribal Consultation Section of this guidebook on page 18 and the definition of Consultation in the Glossary of this guidebook.
2. **Testing and Evaluation of ISM:** These trials allow us to experience firsthand the methods of indigenous stewardship. It is imperative that NRCS work together with Tribes to conduct these tests and evaluations, optimally with the Tribe leading the effort. For guidance and references on conducting tests and evaluations, see Appendix B of this guidebook.

Key to determine correct NRCS process

- 1a. Tribe wants to keep knowledge local and not publish..... Create agreement in accordance with the Freedom of Information Act (FOIA) (see FOIA example story, page 29) or in accordance with Section 1619 of Title I of the 2008 Farm Bill and go to 2.
 - 2a. Method is similar to an established conservation practice..... Option A
 - 2b. Method is not similar to an established conservation practice Option B
- 1b. Tribe would like to share the indigenous knowledge, publishing some or all..... Go to 3.
 - 3a. Tribe would like to share some of the information..... Create FOIA agreement and go to 4.
 - 4a. Method is similar to an established conservation practice..... Option A.
 - 4b. Method is not similar to any established conservation practice... Option B.
 - 3b. Tribe is willing to share their knowledge and publish it..... Document this decision and go to 5.
 - 5a. Method is similar to an established conservation practice.... Go to 6.
 - 6a. No justification to modify the existing national conservation practice standard..... Option C.
 - 6b. Justification exists to modify the existing national conservation practice standard Option D.
 - 5b. Method is different from any established conservation practice... Option E.

Option A. Create a Variance

In GM (<http://policy.nrcs.usd.gov>), Title 450 Technology, Part 401 Technical Guides, Subpart B, Conservation Practice Standards, 401.16 Variances:

- A. Variances are approved when there is a documented need to establish additional purposes for an existing standard or less restrictive quality criterion than those required in the national practice standard. Only the Directors of the Conservation Engineering Division and/or Ecological Sciences Division can approve variances from the requirements of a national Conservation Practice Standard (CPS).
- B. Any request for a variance is to be submitted in writing to the appropriate National Headquarters Division Director. The request will include the specifics of the purpose to be added or criteria to be changed, and supporting rationale for the change.
- C. Variances, when granted, continue for a specified period or until the particular CPS is revised, whichever is shorter.
- D. Variances have the same requirements for monitoring, evaluation, and reporting as an interim CPS standard (see Section 401.17, Interim Standards).

Option B. Consult to Determine and Agree Upon the Best Solution

NRCS does not currently have a process which allows NRCS field planners and Tribes to create a new conservation practice standard without publishing it. In the case where the Tribe would like to keep the ISM local, but would like NRCS assistance through conservation planning and Farm Bill programs, consultation should begin. Collaboration about how the ISM method will be used, how it is technically written, and where the information is kept, as well as how to utilize Farm Bill programs, should entail a written agreement. Federal and Tribal law should be utilized and followed.

Option C. Utilize Existing Standard, but Tailor to Local Needs

The current standard is satisfactory and complimentary to the ISM. However, it could be tailored to suit the culturally important local practice. Tailor the practice standard to suit those needs by:

- a. Specifications: Specifications, sometimes called construction specifications, are used for the construction and/or installation of conservation practices.
- b. Job sheets: Job Sheets exist for simpler conservation practices. They are used for planning, design, construction, checkout, and operation and maintenance of those practices. They contain background, construction specifications, and operation and maintenance for the successful operation of the conservation practice.

Option D. Change Existing National Conservation Practice Standard

If the ISM is similar to an existing conservation practice standard, but subtle or major differences exist, then a revision is needed. To change an existing standard, utilize the method outlined in the NHCP (<http://policy.nrcs.usda.gov/viewDirective.aspx?hid=22299>), Exhibit 5: Developing and Revising National Conservation Practice Standards.

Option E. Write an Interim Practice Standard

If your ISM method is not found on the current list of NRCS conservation practices, then develop an interim practice standard. Utilize NHCP Exhibit 2: Interim Practice Standards, in conjunction with Exhibit 5 (see above).

And/Or: Write a Technical Note

Technical notes are used to issue procedures and/or information on specific technical subjects. They provide specific guidance on applying techniques that have been developed and tested for beneficial and successful application. Conservation practice standards can refer to a technical note. They can be found online in the NRCS eDirectives at <http://policy.nrcs.usda.gov/>, click on Technical Notes.

And/Or: Write a Culturally Significant Plant Guide

The Plant Materials Centers can write plant guides that can specify ancient stewardship methods which can be used to restore dwindling plant populations that Tribes want to bring back. These guides can also outline current methods of plant propagation by seeds or cuttings, relaying valuable information on how to grow and reintroduce the plants onto Tribal lands for the continuance of cultural traditions. Plant guides can be written to underscore the importance of particular plants in American Indian and Alaska Native cultures, detailing how they are sustainably harvested, tended, and transformed into intricate baskets, nutritious meals, and efficacious medicines. Examples of plant fact sheets and plant guides can be found at the USDA Plant Database Web site at <http://plants.usda.gov/java/factSheet>. They are compiled through a partnership of the [National Plant Data Center](#) and the [Plant Materials Program](#). Fact sheets provide brief descriptions of a plant, its uses, and cultural recommendations. Plant guides are similar but more extensive, especially in describing the cultural significance to indigenous peoples.

EXAMPLE FREEDOM OF INFORMATION ACT (FOIA) STORY

By Roylene Rides-at-the-Door, NRCS State Conservationist, Washington

As the Tribal Liaison for NRCS, I had to develop a working relationship with all Tribes in Arizona. When I tried to schedule a meeting with the White Mountain Apache, I was informed that the Soil Conservation Service (SCS) (now NRCS - the name of the agency was changed from SCS to NRCS in 1994) was not allowed on Tribal land.

In years past, SCS was requested to leave the reservation because the public release of the soil survey information that was completed on White Mountain Apache land was used against the Tribe in a lawsuit.

This could have stopped NRCS from working with the Tribe. Yet when I looked at the Tribe's location and realized that the White Mountain Tribe was at the top of a critical watershed in Arizona, it was important that NRCS work with the Tribe. I also knew that NRCS could help the Tribe.

At the first meeting with the Tribe, I asked them what NRCS could do to develop a working relationship with them. They recommended a protocol for information management between the Tribe and NRCS. This protocol was developed to anticipate the sharing of information to address issues of mutual interest and common concern between the Tribe and NRCS.

In this area, NRCS had to first obtain written approval from the Tribe for the use of information. In the agreement, if NRCS receives a FOIA request, NRCS has to notify the Tribal Legal Department within 10 days prior to releasing such information.

END NOTES

ⁱ The word *resource*, which now connotes ownership and production for profit, comes from the old French word *resourdre*, which meant “to rise again.” (Anderson, 2005)



Top Row: Noller Herbert, Conservation Engineering Division Director, NRCS; Roylene Rides-at-the-Door, State Conservationist, Washington, NRCS; Toni Stanger, USDA Civil Rights; John Stensgar, Vice Chairman, Colville Tribe, Washington; Karin Sonnen, Rangeland Management Specialist, Alaska NRCS; Gene Schock, State Resource Conservationist, Alaska NRCS; Wayne Bogovich, National Agricultural Engineer, NRCS; Herman Moonin, Alutiiq, Alaska; Mike Hubbs, Ecological Sciences Division Director, NRCS; **Bottom Row:** Orville Huntington, Athabaskan, Alaska; Justine James, Quinault, Washington; Crystal Leonetti, Native Liaison, Alaska NRCS; Marie Meade, Yupik, University of Alaska Adjunct Professor, Alaska; Larry Merculieff, Aleut, Seven Generations Consulting, Alaska; Ida Hildebrand, Doyon Athabaskan, Chugach Regional Resources Commission, Alaska; Kat Anderson, Ethnoecologist, NRCS National Plant Data Center; Sarah Bridges, National Cultural Resources Specialist, NRCS; **Not Pictured:** Ad Hoc Member: Diane Gelburd, West Region Conservationist, NRCS; Ad Hoc Member: Bob Jones, State Conservationist, NRCS; Martin Bales, Colville Nation Tribal Liaison, Washington NRCS; Shawn Big Knife, Warm Springs Reservation Tribal Liaison, Oregon NRCS

ⁱⁱⁱ NRCS (then the Soil Conservation Service) was created on April 27, 1935, by Public Law 46 of the 74th Congress.

^{iv} In fact, there are some convergences of TEK and western science on our current list of conservation practices which NRCS has westernized. Prescribed burning and terracing are two examples. NRCS would like to honor those convergences explicitly.

^v Some are federally recognized (564 Tribes in 2010) and some are not. The estimate of all Tribes in the United States and its territories is closer to 1,000.

^{vi} The number of tools and concepts might differ from place to place. Tribes should be allowed to add the key principles or values that they need considered. In most, if not all cases, the concepts on this diagram are the minimum concepts that should be given equal and serious consideration.

^{vii} Lengthy discussion about this topic flourished at the first meeting of the NRCS/Native Practices work group. The Elders described to the rest of the group what it meant to put something into their own words, that it diminished the true meaning of the action. Then to put that same thing into English and not their Indigenous language maybe diminished it more. So, it is important to be explicit about the values tied to the individual practice because that practice might have much more cultural value behind it than what we can express in words. But it is also important not to expound on it so much as to embellish or romanticize the value. Keep it simple by listing the values in single words - do not create something that was not meant by the Tribe in the first place.

^{viii} There is a deeper level of connection in these elements than can be articulated. Please use caution in the use of these terminologies in compartmentalized ways.

^{ix} This is a quote from the World Commission, however, it is important to note that indigenous peoples do not have a "lifestyle." We have a way of life. A lifestyle connotes something less deep and more of individual choice than a culturally inherited way.

^x See Frank Pommersheim, *Braid of Feathers: American Indian Law and Contemporary Tribal Life* 37-59 (1995). See also *Cherokee Nation v. Georgia*, 30 U.S. 1, 17 (1831).

^{xi} Angela R. Riley *Straight Stealing: Towards an Indigenous System of Cultural Property Protection* 80 WASH. L. REV. 69 at 90 (2005).

^{xii} Angela R. Riley *Straight Stealing: Towards an Indigenous System of Cultural Property Protection* 80 WASH. L. REV. 69 at 90-91 (2005).

^{xiii} *Id.* at 91.

^{xiv} John S. Lowe, Owen L. Anderson, Ernest E. Smith, and David E. Pierce, *Cases and Materials on Oil and Gas Law*, 4th ed., at 902 (2002).

Indian Tribes have acquired interest in real property in several ways, the principal methods being:

- a. *Aboriginal Title* stems from the recognition of the Indians right to continue to occupy lands even after the fee to such land has become vested in the discovering sovereign. In order to establish this, the Tribe must show that the lands being claimed by the Tribe were occupied and in the actual possession of the Tribe, and the Tribe's use of the land was continuous and exclusive.^{xiv}
- b. *Treaties*. Congress ceased making treaties with Tribes in 1871, prior to this time the United States and other foreign countries made numerous treaties with the Tribes for land that were occupied by the Indians.^{xiv}
- c. *Executive Order*. After 1871, the Federal Government continued to set aside land for reservations under the guise of an executive order; this was additionally ended in 1919. Congress also authorized leasing of oil and gas rights underlying executive order reservations by a separate statute, which simply provides that the Tribal lands within executive order reservations are to be leased for oil and gas purposes in the same manner as Tribal lands on congressionally-recognized reservations.^{xiv}
- d. *Acts of Congress*. The land dealings became the main function that Congress carried out after 1871. The most common type of legislation reserves or sets aside a portion of public domain for the use of an Indian Tribe.^{xiv}
- e. *Purchase*. Tribes still retain a general contractual capacity that enables them to purchase more land, or purchase land back. In addition to purchase by the Tribes, the Secretary of the Interior Department is empowered to authorize voluntary exchanges of land in order to better consolidate Indian land holdings.^{xiv}
- f. Recognition of Indian Rights by prior governments.
- g. The United States has followed a policy that respects the property rights created or recognized by prior governments (i.e., Pueblo Tribe).

^{xv} Kristen A. Carpenter *Real Property and Peoplehood*, 27. STAN. ENVTL. L.J. 313 at 317 (2008).

^{xvi} *Id.* at 317.

^{xvii} Angela R. Riley *Straight Stealing: Towards an Indigenous System of Cultural Property Protection* 80 WASH. L. REV. 69 at 105-106 (2005).

^{xviii} *Id.* at 109.

^{xix} *Id.* at 77.

GLOSSARY

Conservation Practice: A structural, vegetative, and/or management measure which is planned and installed according to NRCS standards and installed according to NRCS specifications.

Conservation Practice Standard: Defines the technology in the practice; identifies the purposes and applicability of the practice; establishes criteria to support each purpose; lists special considerations useful in planning, designing, and constructing the practice; and establishes installation and operation and maintenance requirements. See also *NHCP - CHAPTER 1: GENERAL CONSERVATION PRACTICE STANDARDS INFORMATION*.

Consultation: The responsibility of NRCS to seek advice, guidance, and counsel from, and to confer with, Indian Tribes with regard to natural resource conservation issues that may affect Indian Tribes. See also *TRIBAL CONSULTATION: A GUIDE FOR NRCS EMPLOYEES*.

Cultural Resources: For purposes of this document, the term "cultural resources" refers to the universe and its component parts. Cultural resources are tangible, intangible, spiritual, secular, natural, created, and range in age from ancient times to the present. Cultural resources are valued and interpreted in accordance with societal and individual or personal world views and histories.

Contemporary use of the term in Federal, State, and local governmental environmental compliance is narrower than our definition and generally remains undefined.

Ethnobiology: The discipline of ethnobiology encompasses the totality of the place of nature in a culture - including the role of plants and animals as Tribal characters in legends, songs, or rituals designed to regulate resource use; the innovative ways in which human activities have altered the natural environment and augmented or decreased plant and animal populations. (Anderson, *Tending the Wild - Native American Knowledge and the Management of California's Natural Resources*, 2005) Ethnobotany is the study of the relationship between humans and plants.

Indigenous Peoples: Indigenous communities, peoples, and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop, and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions, and legal system. (Secretariat of the Permanent Forum, 2004) Indigenous peoples include, but are not limited, to Native Americans, Alaska Natives, Native Hawaiians, and Native Pacific Islanders.

Indigenous Stewardship: The traditional manipulation (including spiritual interactions) of natural surroundings by indigenous people with the purpose of increasing production,

improving plant and animal biodiversity, increasing soil health, and numerous other human and ecological benefits. This reciprocal use hinges on respect and spiritual interconnectedness with all of nature.

Intellectual Property Rights: Laws that protect creations of the mind such as inventions, designs, literary and artistic works, symbols, names, images, and performances in order to grant control over their exploitation, particularly commercial exploitation, and to provide incentives for further creativity. (World Intellectual Property Organization, 2004)

Interim Practice Standard: Prepared by the individual States to address natural resource concerns for which there is no existing conservation practice standard, or to enable the use of new technology where existing standards cannot be revised to include this new technology. An interim conservation practice standard can also be used to field test new technologies. See also *NHCP EXHIBIT 2: INTERIM CONSERVATION PRACTICE STANDARDS*.

Traditional Knowledge: Generally refers to the longstanding traditions and practices of certain regional, indigenous, or local communities. Traditional knowledge also encompasses the wisdom, knowledge, and teachings of these communities. In many cases, traditional knowledge has been orally passed for generations from person to person. Some forms of traditional knowledge are expressed through stories, legends, folklore, rituals, songs, and even laws. Other forms of traditional knowledge are often expressed through different means.

Tribal Responsibilities: Tribes have inherent sovereign rights to govern themselves to set their own laws and policies in the best interest of their membership. This includes, but is not limited to, responsibilities, policies, priorities, land uses, and land use areas, and to inform their partners, collaborators, and/or NRCS. Tribes should determine the extent to which SWAPA and other living things are to be preserved or conserved. Tribes should also determine the extent of use, management, reciprocity, and harmony with SWAPA and other living things.

Variance to Conservation Practice Standard: An approved request to establish additional purposes for an existing standard or less restrictive quality criterion than those required in the national practice standard. See GM 450-401-B, Subpart B - Conservation Practice Standards, 401.16 - Variances.

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APPENDIX A: DIAGRAM OF NRCS NATIONAL CONSERVATION PRACTICE STANDARDS SUPPORT THREE BROAD REALMS OF HUMAN-NATURE INTERACTIONS

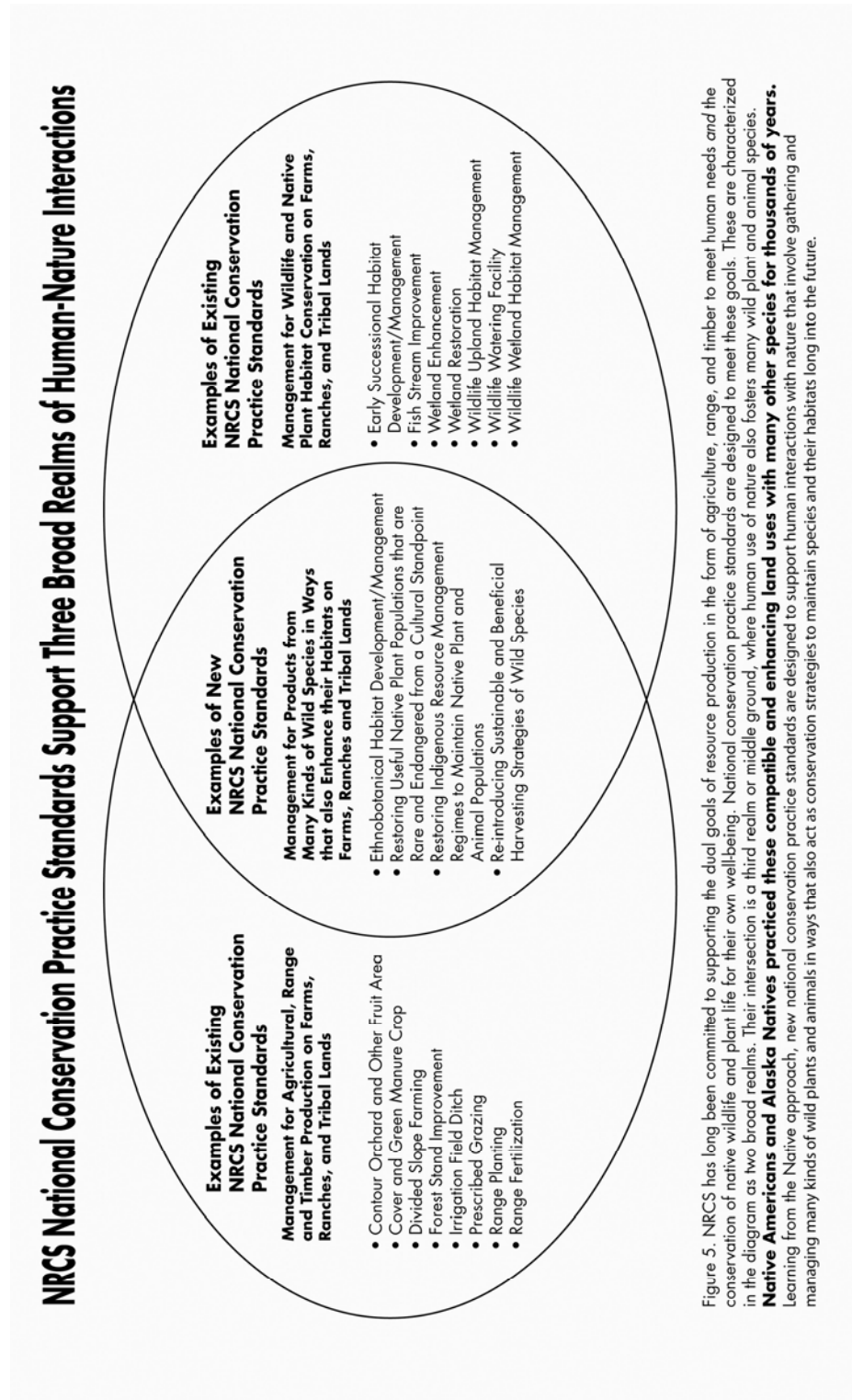


Figure 5. NRCS has long been committed to supporting the dual goals of resource production in the form of agriculture, range, and timber to meet human needs and the conservation of native wildlife and plant life for their own well-being. National conservation practice standards are designed to meet these goals. These are characterized in the diagram as two broad realms. Their intersection is a third realm or middle ground, where human use of nature also fosters many wild plant and animal species. **Native Americans and Alaska Natives practiced these compatible and enhancing land uses with many other species for thousands of years.** Learning from the Native approach, new national conservation practice standards are designed to support human interactions with nature that involve gathering and managing many kinds of wild plants and animals in ways that also act as conservation strategies to maintain species and their habitats long into the future.

APPENDIX B: TESTING AND EVALUATING OF INDIGENOUS STEWARDSHIP METHODS FOR POTENTIAL INCORPORATION INTO NRCS CONSERVATION PRACTICES

Testing the Potential Conservation Value of Indigenous Practices

The lack of a large body of written scientific literature to validate the conservation effects of ISMs, and traditional harvesting, fishing, and hunting practices is in large because these techniques are passed down orally from generation to generation and are "tested" on the ground yearly through practice, not through "experiments." In many cases, Tribes do not need proof of the efficacy of these practices. Indigenous practitioners have tested many of these methods and practices over long periods of time and their existence can vouch for the beneficial ecological effects of these techniques. NRCS can test and evaluate these methods several ways and prove what indigenous peoples have known for millenia.

For vegetative methods, work with Plant Materials Centers (<http://plant-materials.nrcs.usda.gov/centers/>) and Plant Materials Specialists. They can establish studies and field plantings to evaluate the effectiveness of ISMs against existing methods under both controlled conditions at Plant Materials Centers as well as in plantings under typical farm conditions.

For other methods, work with appropriate State or National Technology Support Centers discipline specialists to evaluate and demonstrate indigenous methods and, if needed, identify potential cooperators who could assist with such evaluations if extensive research is required.

Reasons warranting on-the-ground testing and evaluation are varied. Tribes that have not practiced traditional stewardship in many years may want to test different harvesting and stewardship regimes that are most effective in meeting their cultural needs. With climate change and altered environmental conditions, certain landscapes may be unable to support their existing flora and fauna. Therefore, certain stewardship methods practiced by indigenous peoples may produce undesirable outcomes, and need some alteration or fine tuning through the initiation of various testing means. Testing and evaluation is intended to generate new knowledge about the technical design, adequacy, applicability, and other aspects of conservation practices, with a final product being possibly the revision of a practice standard.

Based on the evaluations, promising methods should be incorporated into the appropriate national or State conservation practices. To start with, contact your State or national discipline leads.

For testing and evaluations, in addition to Plant Materials Centers, NRCS has various partners, resources, tools, and programs which could be utilized.

Technical Specialists - Within the agency, specialists in disciplines such as agronomy, archeology, engineering, air quality, forestry, biology, range science, ecology, soils, botany, water quality, and hydrology assist field offices with technical assistance to apply

conservation with current technology or with developing a new technology. In the past, Plant Materials Centers have been instrumental in creating plant guides for Tribes' culturally significant plants to maintain or reinvigorate those plant species.

Tribal Conservation Districts (TCD) - USDA and NRCS have a partner relationship with TCDs through a Mutual Agreement (GM Title 180) between the Tribal Nation and USDA. TCDs should be a major player in the local conservation field trials as advisors on the project, or a grant to carry out the actual field trial. See <http://www.inca-tcd.org/index.php> for the list of TCDs.

Tribal Colleges and Universities (TCU - 1994 Land Grant Institutions) - USDA is a direct partner with TCUs through a Memorandum of Understanding between USDA and the American Indian Higher Education Consortium. They should be invited to help with the conservation field trial. See <http://www.aihec.org/index.cfm> for the list of TCUs.

Resource Conservation and Development Councils (RC&D) can be helpful partners in realizing natural resource or community development projects designed to enhance the local environment and standard of living. These non-profit councils with the technical assistance from the NRCS RC&D coordinator can help identify a variety of funding sources and provide leadership, facilitation, coordination, and education services. For example, a RC&D council could adopt, help fund, and facilitate a pilot demonstration project that would help incorporate an ISM into broader use. To volunteer for projects with your local RC&D council, submit your own ideas, or find an RC&D council near you, visit <http://www.nrcs.usda.gov/programs/rcd> or www.rcdnet.org, or contact your local USDA Service Center.

Other Resources:

Intertribal Agriculture Council - www.indianaglink.com

American Indian/Alaska Native Employees Association for NRCS - www.aianea.com

Utilizing NRCS Farm Bill programs to conduct testing and evaluation:

The Conservation Innovation Grants (CIG) Program is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging Federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program funds are used to award competitive grants to non-Federal governmental or non-governmental organizations, Tribes, or individuals. NRCS administers CIG.

CIG enables NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches that address some of the Nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with Federal, State, and local regulations. This program has the ability to provide advance payments.

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