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Proceedings: Hidden Forest Values

The First Alaska-Wide Nontimber Forest Products Conference and Tour

November 8-11, 2001

NON TIMBER FOREST PRODUCTS IN ALASKA

HIDDEN FOREST VALUES

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Proceedings: Hidden Forest Values

The First Alaska-Wide Nontimber Forest Products Conference and Tour

The Millennium Hotel
Anchorage, Alaska
November 8-11, 2001

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Summary

The Hidden Forest Values Conference brought together a diverse assemblage of local, state and federal agencies, tribal governments, traditional users, landholders, cottage enterprises and other Nontimber Forest Products (NTFP) related businesses, scientists, and experts. The purpose of this forum was to exchange information, cooperate, and raise awareness of issues on sustainable and equitable, environmentally and economically viable opportunities for NTFP in Alaska. This discourse sought a balance of development and sustainability, with respect for traditional uses.

Nontimber Forest Products were defined by the Conference organizers as biological material harvested from the forest that has not been produced from commercially sawn wood such as lumber, pulp, and paper.

These proceedings include extended summaries of presentations by speakers and panelists at the conference. All summaries were compiled and edited by the Alaska Boreal Forest Council and reviewed by the authors. Some authors elected to provide their full presentation or supplemental material; those are included in Appendix V.

Preface

In the Spring of 2000, a small group of entrepreneurs, researchers, community leaders, and state and federal personnel gathered to discuss the future of Nontimber Forest Products (NTFP) in Alaska. Ever increasing interest in and use of these products had begun to raise questions for users and managers regarding sustainability, access, development and protection. Instead of answering these questions, the group raised more issues such as: what is the definition of an NTFP, what is sustainability, who should be promoting the industry and conducting research and development?

We strove to answer these questions. But, how to begin? "Hold more meetings," the agency staff said. "Ask more questions," declared the researchers. "Talk to the people," implored the community leaders. "Look at this a new way," the entrepreneurs suggested, "the problem is an opportunity." The starting point became clear—we needed to hold a conference and get more people involved. Where else could we meet, ask more questions, talk to each other and begin to look at things in a new way?

That day we made two key decisions for the conference. First, no meaningful discussion regarding NTFP could take place without fair representation of the various and divergent views from the extensive group of NTFP users. Therefore, the conference forum had to welcome diversity and create a comfortable environment for all participants. Our speakers, panelists, and topics also needed to reflect the variety of views: empirical science and traditional knowledge, protection and use, research and development. Second, we adopted a broad working definition of NTFP to include all biological products harvested from a forest ecosystem, excluding primary timber products such as lumber, composites, and paper.

These choices led to long planning meetings, difficult decisions and even heated debates. Holding small and focused conferences for every user group would have been a lot easier, but much less effective. Bringing everyone together exposed new ideas, perspectives and created balanced discussions. This type of interaction is vital to the future creation and acceptance of statewide policies regarding NTFP use in Alaska.

Comments from the conference participants reflect the excitement and interest that was generated: "This is the best conference I have ever attended", "I am now inspired", "It was very good to hear from Elders". These proceedings document and endorse the informal and inclusive style set by the conference.

The most important result of the conference has been to raise awareness of NTFP issues statewide. Since the conference the newly formed NTFP workgroup has been busy. We developed and staffed a state fair booth, presented at *The Tongass Centennial: The Next 100 Years*, developed a booth for the October 2002 Alaska Federation of Natives annual convention, will represent Alaska in an NTFP focus group at the Society of American Foresters national convention, and of course we worked hard to create the proceedings you now hold! In addition, one member of our working group is now on the Pacific Northwest NTFP Council. Lastly, we are gearing up to plan the next NTFP conference, tentatively scheduled for February 2004 in Sitka.

If you would like to be involved in future efforts by the Alaska NTFP Workgroup, check out Appendix IV. We look forward to hearing from you. Enjoy these proceedings!

Rachel Morse, Alaska NTFP Conference Workgroup Chair

Acknowledgments

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See Appendix I for current addresses.

Proceedings compiled by the AK Boreal Forest Council: Jan Dawe, Kimberly Maher, Jennifer Nehlsen
Conference photos by Joey Pavia, USDA Forest Service, PNW Res. Sta. AK Wood Utilization Center

The views and opinions expressed within this document do not necessarily reflect the position of the U.S. Department of Agriculture, the PNW Research Station, or the Alaska NTFP Workgroup.

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Keynote Speaker

Gina H. Mohammed, Research Director, P & M Technologies

Figure 1 – Gina Mohammed

Biography - Gina holds a B.S. in Biology from the University of Toronto in Ontario, and a Ph.D. in Plant Physiology from Simon Fraser University in Burnaby, British Columbia. She began her career as a research scientist at AgriForest Technologies in Kelowna, B.C., working for nine years on forest biotechnology, then as a research scientist with the Ontario Forest Research Institute, Ministry of Natural Resources. During her ten years at OFRI, she was a project leader in seedling establishment physiology, applications of remote sensing, development of commercial tests of plant viability and vigor, and emerging opportunities in nontimber forest products.

Gina has served as Adjunct Professor at the University of Waterloo, Ontario, and in a variety of advisory roles to government and industry, including scientific advisor to the federal Industrial Research Assistance Program. She and her husband now own P & M Technologies, a science and information technology company in Sault Ste. Marie, Ontario, Canada.

Gina has helped to organize community and government information sessions and conferences on nontimber forest products, including the Nontimber Forest Products Conference 2000: A Focus on Sustaining Renewable Resources and Development of Nontimber Forest Products in the Algoma District of Ontario. Gina has authored or co-authored 115 scientific papers plus several magazine articles on nontimber herbal products.

The Hidden Face of the Forest: Nontimber Products and Values

In North America, there is a growing momentum in forest management to accommodate and encourage nontimber products and values. We are starting to acknowledge that the nontimber resources of the forest are key, not only to expanding community and rural economic outlooks, but to the overall health and sustainability of forests and forest-based industries. Importantly, the nontimber arena forms a veritable melting pot for the interests of all users of the forest – including the public, entrepreneurs, native groups, forest industry, and government. But along with embracing the opportunities available for individual and group benefits, we must be vigilant in respecting the biological, cultural, and spiritual significance of the forest. These potentially conflicting facets are significantly portrayed in the North, where the forest is the lifeblood of so many. Nontimber products cannot be considered in isolation from nontimber values; otherwise, the longevity of the nontimber industry itself will be curtailed. Further, the paths chosen by a particular region in its pursuit of nontimber prospects may be quite unique, reflecting the historical strengths and makeup of the area and its populace.

This presentation offers an overview of the Canadian nontimber sector – including case studies, cooperative efforts among users, and the role the government in fostering the nontimber sector of the North. The lessons being learned in Canada will

be considered in light of opportunities, potential pitfalls, and recommendations for Alaska. Recommendations include an emphasis on ecotourism aspects as a complement to Alaska's already-strong tourism industry. Research and information needs are also discussed.

Major nontimber forest products in Canada are maple products, Christmas trees, honey, and more recently, ginseng, wild mushrooms, wild berry products, and various nutraceuticals. There is an increasing trend for cultivation, both in conventional nursery settings and in forest "farming". Northern communities also have a strong native traditional arts and crafts industry. Problems have arisen with unregulated wild-crafting and the associated risks to sustainability of specific nontimber resources. Also, there is a great need to coordinate Native interests with conventional business sectors. The provincial and federal governments of Canada have several funding programs to encourage both research and development (R&D) as well as economic development, and these are drawn upon heavily in the North. Forest management by government and industry is changing gradually to reflect the needs and interests of the nontimber sector, both as a source of products and as an embodiment of cultural and spiritual values. It is also recognized that nontimber aspects are a critical piece of current world-wide efforts to establish and certify the sustainability of forestry practices. The need for research, education, and communication is being addressed at a variety of levels, both public and private.

Vehicles that hold promise for development and refinement of the nontimber sector include ecotourism initiatives such as native botanical gardens, cooperatives for product marketing as well as R&D, the development of more value-added products, and products from weeds or wood waste. Greater use of weeds or waste products of wood processing are especially noteworthy in supplementing traditional timber activities, and prominent examples are available, mainly from western Canada.

Development of the nontimber sector must occur in harmony with all partners of the forest, but the particular concerns of native groups warrants special attention at these relatively early stages. Native perceptions of the forest and its place in people's lives, their sharing of traditional knowledge, their access to the forest, and their full participation in any economic benefits that accrue will be central to the ongoing fruitfulness and success of any nontimber endeavor.

Topic: Traditional Uses

Figure 2 - Dolly Garza
Lead Speaker

Figure 3 - Irene Jimmy
Panel Member

Figure 4 - Jesse Johnnie
Panel Member

Figure 5 - Steve Simmons
Panel Member

Figure 6 - Teri Rofkar
Panel Member

Figure 7 - Rita Blumenstein
Panel Member

Traditional Uses Lead Speaker

Dolly Garza, Professor, Marine Advisory Program, University of Alaska

Figure 8 – Dolly Garza

Biography - Dolly Garza (Skungwaii) is Haida/Tlingit, originally from Ketchikan Alaska. Dolly's educational life has been long; and she is still learning from her elders and people. Dolly has a B.S. in Fisheries Science from the University of Alaska Fairbanks; a M.S. in Fisheries Management from the University of Washington; and a Ph.D. in Marine Policy from the University of Delaware. Through her educational pursuits, Dolly is always supported by her family and reminded of her obligations to help her people protect Native use of, and rights to, resources.

Dolly is a professor and has worked with the University of Alaska Marine Advisory Program for 18 years. She brings marine and Native education to schools through workshops and as a guest teacher. Dr. Garza is the author of "Survival Training for Alaska's Youth," and "Tlingit Moon and Tide," both curricula for schools. As part of her job she works with tribal bodies to provide technical and biological information and advise on subsistence management issues.

Dolly is a member of the Haida Descendents dance group in Ketchikan where she is learning to drum and speak basic Haida. She is a cedar and spruce root basket weaver, and a Raven's Tail apprentice weaver with Teri Rofkar.

Dolly serves on several organizations including the Alaska Sea Otter and Stellar Sea Lion Commission, the Alaska Native Science Commission, the Alaska Marine Safety Education Association, the Southeast Regional Subsistence Advisory Council, and the Alaska Science and Technology Foundation.

Traditional Uses and Management

Haida Intro:	**Translation:**
Kilsly ganga	Chiefs
Kuljaat ganga	Ladies held in high esteem
Xaada la Isis	Good people
Iljuwas di nan u iijan	My grandmother was Elizabeth Gardner
Suteen di ow u ijan	My mother is Myrna Garza
Skungwaii hinu di kigaga	I am Dolly Garza
Keeys Xaadas, Salants,	I am northern Haida: Salants Clan
Kallna du di ijan	Bullhead house

As the keynote for this section on traditional uses I hope to provide a framework that sets the stage for the following panel. The early ethnographic documentation on the uses of resources by Alaska Natives generally focused on the harvest of fish and marine mammals, and the collection of valuable cultural items for museums. The uses of plants for food, medicine, weaving, shelter, and culture were generally not documented until after disease and alcohol had significantly reduced Alaska's Native

population. Much of the important information on medicinals and uses of plants was lost as elders died all over Alaska.

Early explorers came to the Americas to find, claim, and exploit resources. Their initial reports to Euro-Asia claimed that these lands were uninhabited and resources untouched. We know this is largely untrue. There were an estimated 33,000 Natives in Alaska in 1880. This represents a remnant of the pre-contact population – after foreign diseases devastated communities and regions for decades. Some communities had already lost at least one half of their members to the early diseases of alcohol, common colds, venereal disease, and general warfare. In other areas smallpox or influenza had destroyed whole communities. I haven't been able to find a population estimate for pre-contact but it surely was much larger.

One could argue that many of these lands were fully occupied with population densities, or community sizes based on the availability of 1) drinking water over the year, 2) material for shelters or homes, and 3) seasonal food and the ability to store food. The development of at least eight well-established cultures in Alaska also depended on the availability of resources for clothing, transportation, culture, medicine, and the knowledge of weather patterns and seasonal changes.

When the early explorers came to southeast Alaska it is estimated that there were at least 10,000 Tlingit and Haida. There were communities along all major rivers and streams. Community sizes generally numbered in the hundreds, and only a few communities were large. Sub-groups would split away and move as resource demand around the community exceeded local capacity. What the early explorers saw appeared to be "untouched" forests, creeks plugged with salmon, thousands of sea otters rafted here and there.

If you talk to Natives you will hear we take "only what we need." If you talk to biologists they will tell you we should take only the harvestable surplus – a mere percent or two of the total population. Thousands of salmon are needed to lay millions of eggs in order to ensure thousands will survive to continue the salmon's cycle. Perhaps what the explorers saw was pure utopia – a perfect relationship between man and the land and sea. I have heard that the word "Indian" came from an early Spanish explorer who when he saw "America" proclaimed "en dios" – in God – or in heaven, such was the beauty of the land and its people. During his time, in the 1500's, tens of thousands, perhaps several hundred thousand indigenous people lived across the Americas.

A respectful relationship with the land, critical to cultural survival, had developed over thousands of years. Each upcoming generation had to be taught when, where and how much to harvest. Inclement weather, physical strength and endurance, seasonal migration, and varying seasonal needs all served to naturally limit harvest levels. In the forest it was work to fall one large cedar tree let alone enough to put up a large clan house. This required the work of the community. There were no exports of raw lumber because other communities had access to their own trees. Carved masks, dance staffs, or paddles were traded across villages – small market: high value – but low volume production. Berries, devils club, spruce root, tea, and Indian potato were picked in short seasonal spurts. In most cases, harvest time was limited by the ripeness of the berry or the need to harvest another resource with a short window of opportunity.

To help children remember the importance of respecting resources, stories were told of respect and consequences for disrespect. A girl who disrespected bears ended

up marrying them. A boy who disrespected moldy salmon was captured by the salmon and lived with them. He returned with the spawners, transformed back to human, and carried the message of respect for salmon to his community.

Wars were fought when outsiders tried to harvest a clan's resource. In areas of abundance, such as herring spawn in the Sitka area, outlying clans were invited in by the controlling clan and allowed to harvest only so much to bring back to their communities. This process strengthened inter-clan relations.

Sustainable conservation is the proper allocation of resources over time to provide consumptive uses to humans. Preservation, by definition, seeks to keep something in an untouched form and disallows human use.

Our people were conservationist in the truest sense of the word, as demonstrated by the reports of the early explorers and ethnographers; reportedly untouched lands lived on by tens of thousands. Our communities were located to take advantage of area resources and the size of the community depended on the harvestable surplus from those resources. When we look at today's communities and the needs of the broader global community we have to wonder if any community is, or could be, sustainable within itself.

We, as Natives, still maintain a cultural connection and a tribal obligation to care for these resources and help in whatever way seems possible. We go to meetings and plead to have the Gravina Island timber harvest reduced, eliminated, or have the transfer site moved to protect subsistence clam and beach asparagus beds. We attend meetings to let managers know they are taking too many salmon, too many trees, destroying too much precious habitat. We work to regain access to restricted parks like Glacier Bay National Park where we are denied use of spruce roots for weaving, berries, egg gathering; things we did for generations in documented Tlingit territory.

We feel our words are not being heard. We come to feel the process is to fulfill a mandate, and not to address the conservation of the environment. Or we come to understand that the agencies, although sympathetic, have to meet broader agency and department goals: to maximize uses, to provide economic benefit and jobs. We find that national directors who must answer to Washington D.C. policies and politics overpower regional managers who listen and support our concerns. We find that, after thousands of years of acting as stewards to these lands, we are now anecdotal.

We commend the US Forest Service for its beneficial MOUs (memorandums of understanding) with tribes such as Sitka Tribe. We ask you to remember that this is not a process to fulfill a mandate to us: it is necessary to help maintain a precious ecosystem. We also ask that you not forget the voices of the individuals, Native and non-Native, who attend these many meetings, and demonstrate their commitment by their very presence.

I appreciate being given the opportunity to present to this conference and hope we can contribute to developing policies and plans which conserve the resource to ensure they will be used and honored by generations to come.

Traditional Uses Panel Members

Irene Jimmy, Sitka Tribal Kayaani Commission

Biography - Irene is a member of the Sitka Kiks.adi Tlingit Clan (Raven, Frog). She is a traditional Tlingit weaver and a founding member of the Kayaani Commission (traditional tribal plant use commission). Irene is also a member of the Sitka Tribe of Alaska's Council.

I am a founding member of the Kayaani Commission (a traditional tribal plant use commission started in 1997) and a traditional Tlingit weaver. I went to Sheldon Jackson College for seven years. Through my art I appreciate my culture.

In 1998, the Kayaani Commission had five commissioners. A conference that year brought awareness of the importance of the Commission. I thank Phyllis Woolwine for coming to that conference.

Sitka is well known for spruce root baskets. The techniques we use today are the same as were used years ago. An artist makes her baskets, blankets, and beading for her family, for the continuity of culture. I do not sell my baskets commercially.

I am concerned with how to harvest products from the forest. We always take for granted that plants will continue to grow in the forest as 'storage' for our culture. Today I'm hearing talk about dividing up these products for economic value. I am really concerned about them continuing for their cultural use. I am concerned for the products that have brought my people as far as they have.

Jessie Johnnie, Sitka Tribal Kayaani Commission

Biography - Jessie is a member of the Chookaneidi Tlingit Clan (Eagle, Brown Bear). She is a fluent Tlingit speaker and knowledgeable culture bearer. Jessie was raised by her grandmother in the traditional Tlingit manner and calls upon this early training when she teaches others in and outside of the classroom.

I'd like to thank Lee for welcoming us to his ancestors' land; and also the Eskimos and Aleuts from outlying lands in southcentral Alaska. It gives me pleasure to talk about what our ancestors gave to this generation. We strive to teach younger generations respect for the land, rivers, mountains to seashores, where ancestors collected medicines: plants from tops of mountains combined with things from the sea. We are very careful about how we harvest because our people believe that anything growing or moving has a spirit. When we go out to harvest we know that we are taking a spirit so we leave something behind.

Today the logging industry breaks my heart. When I travel to all the places where our ancestors used to get food, all you see are stumps of trees from which the Tlingits used to get roots. If they felled a tree they would use every bit of that tree for medicine, for art, for warmth, for housing. And in this day and age a lot of people don't know that the inner bark of a pine tree can be used for food. When I was a little girl they would put all of us to work taking the sweet part of the bark off the tree. It was an all day job. Then my grandmother would build a big fire and we would put the bark shavings on skunk cabbage leaves and fern leaves and then cover it and build a fire all day. We used to make our bread on those fires, too. And a lot of people don't realize

that everything that we do, we use every bit of it (including) anything that is killed for food. If there is too much for one household, then it's shared.

It gives me great pleasure to tell you today a little bit of what our ancestors went through. Even the Athabascans, the Eskimos, when we were put in Alaska, our ancestors were already here. And they survived, all of the Native people survived from time immemorial. They learned how to survive the harsh weather. They taught and left behind a legacy for all of us to adhere to, to hand down to the younger generation. And it amazes me now our mode of travelling was done by canoes that were made out of trees and it took probably eight days to travel from Cordova, to Yakutat, all the way up to Anchorage. Some of our ancestors were fur traders and they were known at the Great Lakes in Minnesota. So you can see that our ancestors did not stay in one place but they traded for many things that we now have. The most important thing that I think about today is our products for medicinal use. People come and take what is ours without asking our permission. Devil's club is an example. We respected the devil's club because it was a spiritual healing plant. And the translation doesn't sound good in English, but in Tlingit it means "something very solid." I want to thank you for sharing what little I can with you.

Rita Blumenstein, Tribal Doctor, Traditional Healing Program, Southcentral Foundation

Biography - Rita is employed as a Tribal Doctor Mother, grandmother, great grandmother, wife, aunt, sister, friend, Tribal Elder: Born on a fishing boat and raised in Tununak, Alaska. Attended Montessori school in Seattle for 4 years. Married and has raised two children. Worked at many hospitals delivering babies as a doctor's aide in Bethel and Nome. Has traveled and taught all over the world, earning money for Native American Colleges. Taught basket weaving, song and dance, and cultural issue classes at many schools and programs. Participated in many healing conferences where her teachings of the "Talking Circle" were recorded and published.

I am talking from my heart. I've written some poems interconnected with Mother Earth. I am honored being up here, speaking. Thank you for inviting me.

My first language is Yup'ik. I come from very powerful people like my grandmother. I grew up with the earth. I eat it. I was born in a fishing boat and I'm allergic to seafood. My father was a fisherman, but died one month before my birth. My mother is Yup'ik and Athabascan. I don't know much about Athabascan culture but I respect that. Even the little bit of Russian that I am, I respect that too. Yup'ik is what I know well. It was my first language.

I really don't have a title. But I find I'm gifted with my hands and can turn babies. I'm a basket maker and storyteller. I went to Old Crow in 1952 and I'm so glad I got to go. Right now I'm working at the Southcentral Foundation's Traditional Healing Program as a Tribal Doctor. I handle the difficult cases that other people can't fix. People are looking for a miracle. The miracle is hidden within each of us. You need to be like a plant. You need to nurture yourself, know yourself. We forget that somehow, somewhere. We need to be getting everyone together by talking circle.

I would like to share that I had scarlet fever, I had polio, I had diphtheria and I pulled through it. I didn't talk for two years because I had a hole in my throat. A

medicine woman who used saliva helped me and that's how her healing was. When she put her mouth to the scar, it was gone. I don't share these things very much. I feel today that it's time to share because how are you going to get well if you don't have a spirit from some other people?

Storytelling was our first school. Probably we learned by listening and action. In western culture, you take notes and put them away. I don't know how many times you use them. In our culture we hear the stories many times until they become part of a body, mind and soul.

It's like food. You don't survive if you don't eat healthy foods. I know how to use the herbs in my village. All I know is in my home in Nome and in this area around Anchorage. I've been living in the valley for twenty to thirty years now. I lived in Nome before. Now the medicine that we use, they're afraid of it because we don't know how to prove it works.

Teri Rofkar, Raven Art

Biography - Teri is a traditional Tlingit artist and basket weaver. She follows the steps of her ancestors, striving to recapture the woven arts of an indigenous people. She believes that the ancient ways of gathering spruce root, with respect for the tree's life and spirit, are a rich lesson in today's world. Traditional methods of gathering and weaving natural materials help her to link past, present and future.

I originally talked about a Kayaani Conference that took place in Sitka. Irene Jimmy and Jesse Johnny were very instrumental in organizing this gathering. It was a powerful conference, talking about "sacred plants" and ways of using them. Critical and fragile knowledge of the plants was shared. The group of people were from all over Alaska. When building awareness on a global scale, it is important to realize these things are happening here.

My own knowledge is based on spending a lot of time in the woods since I was little. In the Tlingit culture we reference the animals, plants, and inanimate places and objects as containing a spirit. In this regard, I have spent many hours in the presence of the Tree People, just building a relationship. One example I gave was: "When is it time to gather the spruce roots?" It isn't always the same date on the calendar. The natural elements, rain, snow, temperature, etc. influence it. I have kept track of these things and, over the years became better at figuring out just the right time to start. Then it came to me! I gather roots in the same fringe of the forest that bears dig roots to get their systems going in the spring. The bears are digging chocolate lily bulbs and lupine roots. I don't have to keep track of all of those weather and temperature indicators. The Bear People let me know when it is time to gather! The word really travels around town when the bears come out of their dens. Knowledge based on natural indicators, rather than our own layer of information, is very accurate.

I went on to describe how to gather the spruce roots with sensitivity to the tree and its life journey. These trees are not just a resource for us, they are our neighbors, I leave offerings; after all I am going to visit them again. There are ways to gather materials without causing too much harm to the plants, but an intimate knowledge of the life and cycle of these plants is needed. In the Tlingit culture these were traditional harvesting techniques passed down for over five centuries. Today it is called science. I

gave an example of traditional methods as science while working with a wood specialist during a basket conservation workshop. We compared spruce roots I had gathered that year (early 1990's) and roots that my great, great grandmother had prepared from the mid 1800's. To the naked eye they were very similar, but when viewed under the microscope they told a different story. My root was jagged and uneven, while the old root was split so evenly that we were able to count the cells, and the count was the same all the way across! The root was split accurately at the cell level! Now that is an intimate relationship when the materials are split so accurately they have strength that the original structure provides!

I realize that some of the traditional gathering methods have steps that I do because that's the way it was always done. Just because I don't know the science behind it doesn't mean it isn't there. I really hope that this group can highlight the value of these materials, how important our relationship is with the plants, instead of just viewing them as a "product for manufacturing!" I have brought spruce roots to weave with and I will have a basket in progress during this conference. Please visit with me and ask questions.

Steve Simmons, Forester, Chickaloon Village Traditional Council

Biography – Steve is the Lead Forester with the Chickaloon Village Traditional Council.

I work for Chickaloon Village, an Athabascan Nation sixty miles east of Anchorage on the Glenn Highway. I'd like to speak about traditional use with respect to spirituality, commercialism, and protecting the resource of NTFPs. It's a fascinating field. There are a lot of opportunities and possibilities out there. There are also a lot of opportunities and possibilities for the destruction of the resource. The ideals and the practices of our elders should be built into everything we do with respect to NTFPs, especially the education process. Everything is interconnected — fish and wildlife, trails, NTFPs.

I manage a forestry department charged with economic resource development, timber harvest, building roads and trails. What's good for the tribe is good for the future generations. The dilemma is this: How do we create a balance so that we don't exploit, or even appear to exploit, the resources up to a point where they may not exist? The pressure is already on with respect to our fish and wildlife resources and our traditional access to trails and hunting areas. ATV use is increasing the pressure at a tremendous rate. People go out hunting or just recreating on four wheelers and the next thing you know they're responsible for driving over people's traditional berry picking grounds. It's easy to get out there with a machine and just pick, pick, pick. We're already seeing heavy use in the south central area. It's ringing the alarm bells but we're not quite sure what to do about it. We've talked about farming, or establishing an area that can be put into production for our own particular use, or for economic development initiatives. But at the same time there are many people in the tribal communities who don't agree with this approach.

Commercialism and spiritualism do not mix well, so we have this constant dilemma. How do we create economic development but maintain spirituality, with

respect for the Creator's tools that He has put before us to use? On a personal level it's fine to harvest for whatever our needs might be. If our harvest exceeds our capacity to store it, it's shared first and then taken home.

I'd like to give you all some ideas about education. For example, when we encourage our berry pickers or jam producers to go out and pick, maybe we can sit down and say, "There are certain practices and ideals that we'd like to see utilized so the berry patches are not picked clean."

Chickaloon Village is involved in a few economic development activities. One of them is birch syrup development. We're really proud of it. The tribe pulls together into something that we have fun doing. It's a challenge. We've combined a lot of our departmental assets to make the job easier — but with the exception of a prayer and an offering in the startup phase, there's very little spirituality about it. It's about maximizing the potential of the labor force. It's about minimizing your efforts so that you can get a nice product out on the market for a reasonable cost, which of course the producers can be proud of while creating some economic development for your people.

The further we go down this road, the more discussion occurs as to how do we create a balance between the spiritual aspect of traditional uses and increasing commercialism. Right now we have no answers. If anyone has any answers, I'd be willing to hear them. The best thing we can do is to just keep moving forward at a slow pace. We should get into some serious discussions about regulation. At the federal and state level, these kinds of discussions are already happening with regards to ATV (all terrain vehicle) use. They need to happen. Alaska's not going to like it, but the destruction that is happening to the trails is immense, to the point that trails that have been in use for hundreds, maybe even thousands, of years have been totally destroyed. The Native people won't attempt to use them, or can't use them. The BLM (Bureau of Land Management) is looking to address these issues. There are provisions in the Alaska Native Lands Settlement Act that also apply. Maybe we can create some commissions or boards to work alongside these people at the state and federal levels so that our concerns of overuse and exploitation of NTFPs can be addressed.

Breakout Session (Combined): Traditional Uses and Social, Ethical and Spiritual Aspects of NTFPs

What	Who	Comments
History of treatment of Native knowledge	Someone to work with Native people on grant to Native tribe/Regional health program	**Where**: Alaska history curriculum development for public schools **How**: Continuing forums between agency people and Native community
'Witchcraft' went underground	Southcentral Foundation	**Where**: Bring healers together again
Sharing traditional healing methods with western medicine facilities	Healers/doctors	
Special relationship between Native people and governments: Government to government, federal, state, cities	Federal/ state/city	**How**: Bring these groups together about access
Certification of harvesters		**How**: Promote ethical and spiritual gathering methods

Table 1 – Issues raised during the combined breakout session of the Traditional Uses Group and the Social, Ethical and Spiritual Aspects of NTFP Group.

The breakout session for the Social, Ethical & Spiritual Aspects Panel was combined with the breakout session for the Traditional Uses Panel at the request of the breakout session participants.

Topic: Biological Sustainability

Figure 9 - Nan Vance
Lead Speaker

Figure 10 - Glenn Juday
Panel Member

Figure 11 - Dolly Garza
Panel Member

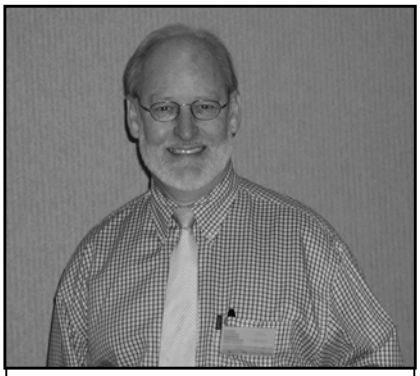

Figure 12 - Gary Laursen
Panel Member

Figure 13 - John Zasada
Panel Member

Biological Sustainability Lead Speaker

Nan Vance, Research Plant Physiologist, USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR

Figure 14 – Nan Vance

Biography - Nan is currently Supervisory Plant Physiologist and Biology and Culture of Forest Plants Team in the Resource Management and Productivity Program at the Pacific Northwest Research Station, Forestry Sciences Laboratory, in Corvallis, Oregon; she just completed a six-year term as Team Leader. Nan's extensive education has earned her a B.A. in Mathematics and Psychology, a Masters in Education for Environmental Studies, a M.S. in Forest Tree Physiology, and a Ph.D. in Plant Physiology.

Prior to her work with the Pacific Northwest research Station, Nan worked for Oregon State University (OSU) as Supervisory Plant Physiologist, with research areas in plant physiology, environmental biochemistry, and conservation and reproductive biology of forest plants. During this time she also had a courtesy appointment as Assistant Professor for both the College of Forestry and Department of Botany and Plant Pathology at OSU.

In recent years, Nan has played key roles in the development of Forest Service NTFP policy at the national level, as well as in Alaska. She is widely sought, both throughout the United States and internationally, for her expertise as one of our nation's authorities on the biological sustainability of NTFP.

Nan has published numerous papers, books and reports on biological sustainability of NTFP, most recently the Forest Service publication "Special Forest Products Species Information Guide for the Pacific Northwest" (PNW GTR-513).

Biological and Conservation Considerations in the Use of Wild Plants for Nontimber Forest Products

The conservation and sustainable management of hundreds of commercially important plant and fungal species depends upon implementing effective strategies not only for sustainable harvest, but also for species, habitat, and ecosystem protection. Applying an understanding of the biological adaptations and limitations of plants, as well as their patterns of growth, reproduction, regeneration, will help to promote their conservation and contribute to sustainable harvest and management. Maintaining viability and future evolutionary potential of plant species will also require putting into use an understanding of how species and their habitats are influenced by climate, soils, landforms, and history of disturbance such as fire and disease (Vance 2002). But the collection and use of wild plant species cannot be properly addressed if it is concerned only with plant species and their habitats and does not include the human relationship with the plant resource.

Biological and ecological models may be of little value in projecting long-term species or ecosystem sustainability unless human interactions with plants are considered and can predict the behavioral relationships of people with their environment.

Are there any intrinsic features of selective resource use that have elements of sustainability? Selection of plant resources for local availability, abundance, and quality of desirable species are energy saving criteria for a variety of animals from insects to ungulates and humans. As resources are depleted, animals migrate or select different species. If they can't, their use is regulated by their failure to thrive or reproduce. Long histories of traditional harvest and use of native plants may provide models that help define sustainability. Humans also have generally selected species that were abundant and accessible for use, recognizing that it is energy efficient to have a reliable and accessible food resource. That indigenous people select from diverse and locally abundant plants suggests they might favor consistently available botanical resources that could sustain them at a most efficient level (Moran 1979, Phillips and Meilleur 1998, Salick et al. 1999). Over time, harvest technologies evolved that would help to insure the sustainability of their food, shelter and medicinal resources. These harvest technologies may provide models or a basis for developing sustainable harvest and plant conservation strategies for species of interest today (Lantz 2001).

Plants that are widespread, abundant, and common usually have robust regeneration, reproduction and growth. In addition spatially and seasonally selective user patterns, such as migrating to grassland areas for digging roots in the Spring and to upland forests for harvesting berries in the Fall, distribute harvest over a variety of species and tends to conserve plant resources (Turner and Efrat 1982, Hunn 1991). In many cases, setting spatially limited fires to open the understory would increase berry production or otherwise improve abundance of usable plants (Anderson 1996). Thus, selecting species that vary in food production over space and time, and are common, abundant, and locally available; and augmenting desired species' persistence through cultural treatments that maintain bio-complexity are practices that might contribute to sustainability of used species without detriment to whole plant communities (Vance 2002).

Similar user practices may in some degree apply to traditional wildcrafting. In an assessment of over 70 floral and fungal species that supply many herbal and other commodities in the Pacific Northwest, most of the species harvested were found to be common and relatively abundant (Vance et al. 2001). Various plant species have supported "brush pickers" in that region for decades. Across the U.S., herbalists and wildcrafters have been collecting, using, and selling products from local populations of plant species for generations. Their livelihoods probably depended upon local trade and reliable markets. But they also depended upon the abundance, diversity, and availability of the local biota to provide a dependable resource without the expenditure of much economic energy (capital). Typically plants would be harvested to encourage regeneration and many of the products would come from renewable portions of plants, or their fruits (Cunningham 1991).

The above discussion only suggests kinds and amounts of harvest and use that might sustain the user, plant resource, and habitat. But how does one evaluate if sustainability is in effect? On managed but uncultivated forestlands, a largely unanswered question is how to measure sustainable harvest of botanically useful species. On timberlands sustainability of a commercial species is quantified by the replacement of the species harvested in a purported sustained yield formula. While monitoring harvest activities is important, monitoring a number of plant populations

across a species' native range to determine the level at which extraction exceeds replacement may not be practicable or useful. As was true for calculating carrying capacity, harvest levels that begin to reach a plant population's replacement capacity may be too high for maintaining population viability in the long term. Accurate models of plant population viability in response to harvest would have to account for climatic variations that affect population demographics, recruitment, mortality, and reproduction, as well other factors that affect species distribution, abundance, and growth (Marcot and Murphy 1996).

Harvesting levels and associated ecological, sociological, and economic factors should be examined through garnering information from local commercial and traditional harvesters. Historical use and customs, understanding of how harvest affects species, knowledge of species demographics, distribution and variation, current problems with harvest, and historical and present importance of species to culture and economic stability of community should be understood. Are species being harvested to serve a mass or niche market, local and regional economies, and/or to support tradition and custom? Are there historical records that can be referenced for comparing to present plant population sizes and levels of harvest in relation to human population growth rates that would affect demand and use?

Application of the biological knowledge of a plant harvested for NTFP, its patterns of growth, reproduction, regeneration, and ecological requirements and limitations are essential to sustainable harvest and management. Maintaining viability and future evolutionary potential of plant species will also require putting into use an understanding of how vegetation patterns are influenced by climate, soils, landforms, and history of disturbance such as fire and disease. The conservation and sustainable management of hundreds of commercially important plant and fungal species will depend upon implementing effective strategies not only for sustainable harvest, but also for species, habitat, and ecosystem protection. Although inventories, monitoring, and appropriate application of ecological information will not guarantee that plant species, communities, and habitats will be sustained, they are at greater risk without these actions. These actions are necessary if strategies are to be developed that afford protection of forest flora, reduce risk to the environment, and save cost to society as well. To sustain long-term harvest of wild plants and plant parts for NTFP, the challenge will be to accommodate the biological and ecological requirements of these species, their habitats and associated plant communities while under increasing pressure from complex social and economic forces.

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Biological Sustainability Panel

Glenn Juday, Professor of Forest Ecology, University of Alaska Fairbanks

Biography - Glenn received his Ph.D. at Oregon State University on old-growth forests of the Oregon Coast Range. He was Alaska Ecological Reserves Coordinator from 1977 through 1988, and has been Professor of Forest Ecology with the Forest Sciences Department at UAF since 1981. A member of the Bonanza Creek Long-Term Ecological Research Group, Glenn's research involves long-term studies and issues of biological diversity, especially under management.

Sustainability is *not* unchangeability. When we talk about sustaining human uses and the potential of the forest to meet different human needs and desires, we are talking about something that's unchanging in only a limited sense. But we know we are dealing with nature, which is changeable. These two contradictory ideas are rectified when we consider "integration over spatial and temporal scales." This scientific term means that sometimes you have to find what you're looking for in other places because it's not time yet for it to be produced on a particular piece of land, given the way nature changes.

The conceptual scheme for talking about the nature of change in forest systems is called the "disturbance regime." Characteristics of disturbance regimes provide ways to describe and understand them: 1) Kind or type of disturbance: Is it a blowdown, insect, or fire disturbance? 2) Amount or size of disturbance: Is it a small or a huge forest fire? 3) Rate: Does it burn every 1, 10, 50, 100, or 300 years? 4) Timing: Does it burn in the spring, mid-summer, or fall? 5) Pattern: does it kill every tree or every other tree, or only the understory? The connection between sustainability and disturbance regime is this: Sustainability depends upon the stage of forest development that your desired organism is found in — early, middle, or late — compared to the disturbance regime.

Succession — forest development through time — is one of the most important ecological concepts, but succession never happens in the abstract, it always happens in real space. I have been monitoring successional change and development in the Bonanza Creek Long Term Ecological Research site near Fairbanks. I've been personally involved for almost twenty years. One of the most interesting comparisons is between two upland sites that had well-developed older white spruce. One of the sites is still an old spruce forest. We've mapped and measured every tree and know that not much change happens there. Sooner or later there's likely to be a fire; in fact a charcoal layer in the soil shows that a fire in about 1785 initiated this stand. It went through a series of readily recognizable stages until it finally returned to mature spruce. The old white spruce site is matched with a nearly identical site that supported an old-growth white spruce stand but which burned in the 1983 Rosie Creek Fire. It doesn't look anything like the older stand now. The exact character of the new forest has been determined by factors such as distance to the fire's edge, to seed source, and other processes. Immediately following the Rosie Creek fire, we experimented by allowing salvage logging on part of the burn and maintaining an unlogged research reserve on the other part, where we let the burnt logs fall and cover the ground. The tremendous accumulation of logs on the research reserve shows just one difference that forest management can produce as one of the influences on succession.

I have developed a conceptual scheme to identify what kinds of organisms are at different levels of abundance following a stand-replacing disturbance (fire) — going from "0" immediately following the fire to about 200 years — on a particular area of boreal forest. The immediate flush of flowering plants following a forest fire decreases as the canopy closes in. Flowering plant diversity is then partially renewed as trees fall and create canopy light openings in mid cycle. The tremendous abundance of burnt logs on the research reserve at Bonanza Creek will become the substrate for wood-decomposing fungi. Fungal diversity will reach a maximum in mid-successional stages as the old logs become well decomposed and new logs are added. Late in succession arboreal lichens reach a maximum after the canopy reaches its maximum depth and large-diameter limbs and trunk surfaces have been colonized for more than a century. The higher humidity, shade, and needle litter in late successional stages create the conditions for mosses and similar plants.

These examples show that biodiversity characteristics change over the 200-year life cycle of a typical boreal forest. If we want to target any species for management, we have to understand successional history at both the stand and landscape levels. Disturbance characteristics create conditions for different populations of organisms. If you want to harvest nontimber forest resources, this is the kind of perspective you have to adopt to understand the landscape you're dealing with. Fires and other disturbances happen all the time. The landscape changes constantly and the relative abundance of the species you want to target will change accordingly.

Dolly Garza, Professor, University of Alaska, Marine Advisory Program

Biography - Dolly has a B.S. in Fisheries Science from the University of Alaska; a M.S. in Fisheries Management from the University of Washington; and a Ph.D. in Marine Policy from the University of Delaware. Her credentials in western science are strengthened by her value for the traditional knowledge of her people. In addition to her role as University Professor, Dolly serves several organizations including the Alaska Sea Otter and Stellar Sea Lion Commission, the Alaska Native Science Commission, the Alaska Marine Safety Education Association, the Southeast Regional Subsistence Advisory Council, and the Alaska Science and Technology Foundation.

Traditional Ecological Knowledge and Sustainable Development

Use of Co-management

I would like to make several points on traditional ecological knowledge (TEK) and sustainable development in federal forestlands. In building from my previous presentation, I will point out what I think is currently missing in today's management that can be taken from traditional Native management and stewardship.

Historically, areas were owned by tribes or clans and managed for use by the community. The clan or village leader would determine harvest levels and times. This level of control was needed to ensure resources were sustained from one generation to the next. Berry patches were held by clans and occasionally branches were broken to encourage a thicker berry crop. Spruce root gathering areas were cleared of other vegetation to give the spruce roots maximum nutrition and to make gathering beautiful

straight spruce roots possible. Strict rules were applied to gathering and using devil's club as a medicine.

Can this use and management process be brought forward to today's management of the Tongass and Chugach forests? The use of co-management, the shared responsibility to act as stewards to a resource, is gaining ground in resource management paradigms. It has become evident that if stakeholders take part in the development of plans and are equally liable for the consequence of the management they will work harder to find sustainable plans and activities. When stakeholders can comment only on a draft that is near complete and will not change much they feel they are not being listened to, and disassociate from the process. We witness this in poorly attended public meetings.

Education and Respect

Many harvesters are young adults, who are out on an adventure. They may travel to an area to harvest mushrooms and leave once they are done with money in their pocket. They do not have the same respect for the area as the local residents who think of next year's crop and the health of the habitat as they harvest the mushrooms or berries. This ignorance of conservation needs and ecological balances can result in over-harvesting and habitat degradation.

Harvesters should be required to receive certification from a short course on the ecology and sustainable nature of the habitat and specific resource. They should also be required to sign a contract to tie continued harvesting opportunities with conservative practices.

What Does the Community Want?

If development is to occur in an area, the community should be part of the plan. Private land owners, including village and regional Native corporations, may be interested in developing small scale harvesting opportunities but lack the development or administrative skills. Too often permitting, whether experimental or commercial, occurs before concerned citizens are able to raise their concerns in the proper forum. By the time concerns are properly put forward, harvesters/businesses can claim they have already invested their life-savings in the business start-up and will suffer irreparable harm if not allowed to continue harvesting.

Community members need information on what "flux harvesting" looks like and its potential impacts on community services. If dozens or hundreds show up in Winnebagoes or trucks with tents to take advantage of a seasonal opportunity, how will that affect community member harvest opportunities? How will such flux harvesting affect parks, campsites, etc., and who will be responsible for increased use of public facilities such as restrooms?

Plan for Average Returns — Not Exceptional Returns

A continuing error in resource management is the slow push to maximize the harvest and benefit from a resource year after year. Small businesses do not plan for seasons when environmental changes/factors lead to poor production. They end up blaming government and expect compensation for lost opportunities. The potential harvestable surplus from an area needs to be calculated based on fluctuations as well as overall ecological stability.

John Zasada, Northern Silviculture Project Leader, Forestry Sciences Laboratory, USDA Forest Service, Grand Rapids, MN

Biography - John has been working for the Forest Service in land management research for 40 years. From 1968-1985 he worked for the USDA Forest Service Institute of Northern Forestry in Fairbanks. Among his many special interests are silvicultural systems for integrating timber and special forest products values; and trying to understand harvest, treatment and use of various natural materials for basket making. He has a personal interest in birch bark weaving.

Careful Harvest of Nontimber Forest Products—Some Considerations

Many of us derive personal pleasure and income from the harvest of nontimber forest products (NTFP). The question is—do we know how to harvest in a manner that does not unnecessarily harm the plant and that leaves it in a condition to recover from the effects of harvesting? In other words, is harvest of NTFP sustainable? The following considerations provide a guide that I have developed for my own thinking regarding "careful" harvest practices and gaining access to materials for harvest. These few guides are by no means original or all-inclusive. They were developed by combining basic concepts of plant growth and information provided by experienced, thoughtful harvesters.

1. Whenever possible, harvest materials from areas that are scheduled to be disturbed for other reasons, e.g. timber harvest, land clearing, road construction, etc. Harvesting in these areas utilizes materials that are otherwise destroyed and takes pressure off areas where disturbance will not occur. In particular this applies to materials like birch bark that when harvested leaves the trees unattractive and may result in mortality of some trees and inner bark of other trees—those removals that might particularly stress a plant. These areas will also be good sources of landscaping materials—that is, they provide transplant materials. One can learn about these areas by talking with local foresters, keeping your eyes open for land clearing or tree cutting activities, advertising in the newspaper or by word-of-mouth. In my own experience one learns about these areas just before the operation is about to start and you have to be ready to do your harvesting at a moment's notice.

2. If harvest is from areas that will not be disturbed as in "1" above, an effort should be made to protect the growing points of the plant to the maximum extent possible. The main aboveground growing points are terminal and lateral buds, and the cambium (the layer between the wood and inner bark) (Note: there are also below ground growing points on roots and rhizomes that are important.) The protection of these growing points will reduce the likelihood of serious long-term damage and allow the plant to recover as quickly as possible. For some species, willows for example, individual plants recover quickly and seem to benefit from some pruning. But, even for these plants, the rate of recovery to a desired form or size will depend on the buds left for shoot and leaf development.

3. Damage to a plant can be both direct and indirect. Direct damage is immediate and results from the removal of the desired part of the plant. Indirect effects occur, for example, when harvesting results in making the plant less resistant to pathogens and

insects. Indirect effects may not become obvious for many years after the harvest of materials.
4. Be selective of the materials that are gathered. Know what you want and harvest only those materials that are useful; minimize waste. This can also reduce harvest effects on the plant.
5. Bear in mind that careful harvest methods may allow future harvests of the same material from the same plant. Also keep in mind that severe damage to the plant may eliminate the potential for future harvests of different materials from the same plants.
6. There is often a "best" time of the year to harvest a plant material to assure the best quality and the least damage to the plant. This information can be gained by careful observation, reading, or consulting others who are willing to share their experience. The best information often comes from those that have spent time in the past gathering and learning from their efforts.
7. Always get permission from the landowner. Offer to pay for materials or offer some of the value-added product that you are making for the right to gather on private lands. Working with landowners can be a key to learning about opportunities in the future.

In summary, what careful harvesting practices come down to is a respect for the plant and respect for future uses of the plant while gaining the personal satisfaction or income that is derived from harvesting NTFPs.

Gary Laursen, Senior Research Scientist, Institute for Arctic Biology, University of Alaska Fairbanks

Biography - Gary has been a working mycologist for 34 years and a teacher of biological science for 50 cumulative years. He has research interests in Arctic, Subarctic, and Subantarctic fungi, especially the mushrooms and toadstools. Gary has developed an international research team investigating fungal taxonomy, ecology of high latitude tundra environments, edibility by humans and other mammals, and symbioses. His photographs of fungi are published broadly. The Mushrooms of Denali National Park & Preserve is in its final preparation for a 2002 printing.

Sustainability of Cryptogams in High Latitude Alaskan Forests: Unregulated Botanical Forest Products

All of us are challenged to become, if not already, vigilant stewards of our lands. Five points are necessary to consider in any future discussion of forest cryptogams as NTFPs. We must:

I. Identify potentially useable cryptogams (defined here as mushrooms, lichen, mosses, parasites of mosses, lichen, and mushrooms, slime molds, fern, horsetails, and clubmosses).
II. Consider what potential uses cryptogams have.
III. Conceptualize what will ultimately drive the harvesting of cryptogams.

IV. Address what we need to know to successfully, but not destructively, harvest cryptogams.

V. Provide recommendations to initiate dialogue as to how best to go out and do this.

Due to space limits, this summary only enlarges upon Point V. Recommendations to initiate dialogue:

1. Cottage Added Value 'Industry' (CAVI) should depend more on 'nomadic/itinerant' collecting of annually renewed resources than attempts to 'culture' due to:
   - The high costs in materials and finances for initial set ups and maintenance,
   - The uncertainties of fruiting responses in any one area/region during any given year, a function of soil moisture, temperature, substrate inoculation, and having a thorough understanding of the reproductive biology and roles played by species taken,
   - Any cottage industry is a long-term commitment to the missions of finding, collecting, preserving, packaging, and marketing with no assurance of large sum income.
2. Low-intensity, long-term monitoring and inventory development to assess species and species availability are mandatory as their presence and abundance is intrinsically linked to environmental parameters. Having this knowledge is paramount to the success of any CAVI utilizing cryptogams.
3. Market and management driven funding is needed to correlate cryptogam productivity, habitat preference, disturbance sensitivity, and environmental health to:
   a) Develop long-term monitoring,
   b) Successfully build meaningful inventories,
   c) Ascertain adequate monitoring procedures,
   d) Understand the reproductive biology, symbioses and host interactions, population dynamics, genetic plasticity and fruiting responses,
   e) Integrate scientific findings with indigenous knowledge to maximize the harvest and creative uses of NTFP products.
4. Use mission oriented data gleaned from research to:
   a) Assess cost effectiveness, renewable and sustainable harvesting,
   b) Provide forest managers with ammunition to engage in proactive, cause and effect assertions rather than reactive, after-the-fact knee jerk responses to 'crises,'
   c) Develop a meaningful and non-burdening permitting system cordial to the process, and provide encouragement to its participants.
   d) Bring forward TEK into land/resource management guidelines (e.g. develop cedar bark harvesting methods with input from traditional users).

Breakout Session: Biological Sustainability

- Reduce human population
- Harvest monitoring to gather baseline data to assess sustainability
- Basic resource inventory data/ survey: vegetation, landscape, etc.
- Who: Coordinated effort is best: Federal, State, Native corporations
- Define sustainability
- View both positive and negative aspects of management
- Understand ecology of relationships
- Species sustainability guidelines
- Understand cycles of change
- Potential effects of climate change
- Promote education on forest sustainability: materials, training, etc.
- How to measure sustainability: methodologies
- Quantify expected range of variability
- Exotic species
- Assess impacts within high use areas
- Promote NTFP demonstration projects statewide
  Who: interagency, local business
  Where: Homer Demo Forest—Homer
  Skyview High School—Homer
  Heritage Park—North Pole
  White Stone Farm—Delta
  Pearl Creek Elementary School—Fairbanks
- Create an interagency/business NTFP organization, include Mental Health Trust Land managers

Table 2 – Issues of biological sustainability of NTFP in Alaska.

Topic: Economic Opportunities

Figure 15 - Jim Freed
Lead Speaker

Figure 16 - Jean Wall
Panel Member

Figure 17 - Elstun Lauesen
Panel Member

Figure 18 - Nikolai Shmatkov
Panel Member

Economic Opportunities Lead Speaker

Jim Freed, Professor, Special Forest Products Extension, Washington State University

Figure 19 – Jim Freed

Biography - Jim Freed is the Special Forest Products Extension Professor for Washington State University (WSU), based out of Olympia, Washington. As such, he has the lead responsibilities for all special forest products educational programs for Washington State University. He has been an Extension Professor for WSU since 1977, and for Ohio State University from 1973 to 1977. Jim's professional work has focused on developing economic benefits for forestland owners through enhancement of native plants for the production of NTFP. He has focused on giving landowners the decision-making tools to manage their lands sustainably, both for the plants and the families and communities that rely on them.

Jim has been involved in twenty-nine international projects whose focus has ranged from developing NTFP marketing and management cooperatives, to the development of markets for products produced in the Pacific Northwest. He is presently working on a project with the Maki Indians to develop a community-based forestry program with a focus on NTFP. Jim has been a co-investigator on six research projects with the USDA Forest Service, Oregon State University, Washington State University, and University of Idaho. He has written over one hundred articles for newspapers, magazines, periodicals, and journals, covering forest management for sustainable production, commercial production of new products, international marketing, direct marketing to consumers, and management of locally based NTFP businesses.

On October 2, 2001, Jim successfully initiated the Northwest Harvesters and Research Association (NHRA). It will be working with the Washington State Department of Natural Resources to develop management plans for over 37,000 acres of working forest, and will include NTFP as an integral part of the total management plan. This relationship is unique in that it also uses harvesters to develop and conduct inventory and research programs for understory management.

Economic Opportunities for Nontimber Forest Products in Alaska

It's really interesting that what drives economics is, "Can I make money with this?" Making money without conscience will cause problems, but the real driving force for the people to be in the forest is that there's value in what people are removing from the forest. In today's discussions, what we haven't come to yet is what we want to talk about: Can we make money at it? The driving force is that there is value to what we are removing from the forest whether we are harvesting for commercial use, personal use, gifts, or subsistence.

I work with small landowners, people who own around 5 acres, who want to know what they have on their property so they can use it themselves. In the state of Washington, 90,000 people own between 5-30 acres of land. Most of the people have no idea what they have there. Once they find out about it, it's amazing how they value

their land differently. Now it's not just a place to harvest trees, but it becomes their personal garden. They develop a relationship with the land.

If you want to look at what's going on in the forest, there are not many people in forestry who will listen to you about NTFPs. You have to talk the economic terms foresters relate to on an economic base: board feet, tons, cubits, volumes per acre. If you're going to be starting a business, then you should be talking with horticulturists, who have so much knowledge that we have not yet drawn upon. A horticulturist knows more about a plant than a forester. The horticulture industry works with the plants to use in people's everyday life for food, ornamental value, etc. There isn't a plant that we've talked about that a horticulturist hasn't looked at somewhere in the world, because each plant we've talked about today has been developed somewhere in the world, and therefore is being managed, especially woody species and associated flowering plants.

How plants respond to management is really important since that's what you're sustaining your business on. Without knowing how much resource is out there and how much you can harvest, it will be difficult to start up a business of any size. Things that you need to know are how sustainable the resource is, what its uses are, the annual life cycles, how they respond to fertilization, how they respond to overstory removal, etc.

One great resource for information are wildlife people. They can tell you how plants respond to overgrazing. They can tell you the distribution of fungal spores based on different wildlife. They know that flying squirrels eat spores of a white fungus that grows on Douglas fir and larch. As the fungus goes through the squirrel's digestive system, they put down the spores for the fungus to reproduce. When talking to matsutake (pine mushroom) collectors, they say that some of the best places to collect matsutakes in the Olympic Peninsula are where the elk have been. Elk feed on matsutakes and the mushrooms go through their digestive systems. Working with a fungi researcher, I learned that the best reason that matsutakes can't be grown commercially in a darkhouse is because they haven't been through an animal's digestive system.

Once we know all about a species, we tend to assume all species with the same common name are the same everywhere. But this not so. A huckleberry growing in Alaska is probably not the same as one growing in Carson, California. Through the growing range of huckleberries, the size of the fruit is different and the sugar content varies. This influences the chemical components and the capability of the plant to be transported, to store well, etc.

Most of the fruits and vegetables that we eat everyday are not managed because they taste good; they're managed because they ship well. Most of the berries that you buy at the store, no matter how organic that they are, have been designed and researched for how well they ship. There was a great book written in the 1970's, Hard Times, Hard Tomatoes, which is all about new varietal forms that are designed so they harvest and ship easily. This book talks about the research that was done to develop square watermelons so that they could be shipped nicely. The major reason that many special wild edibles will not enter a major market anywhere is because of the lack of post-harvest care. After picking, products need to be cooled to have a shelflife, whether this is refrigeration, dehydration, or fast freezing. The next step in setting up a marketing plan is looking at not only when do you pick, but what is your post-harvest care of your wild edibles? What is its shelf life?

One thing that needs to be considered is: what are some of the opportunities and markets for the resource? When I first came to Washington, there was a group of people growing zucchinis, and they wanted to do all these wonderful things with zucchinis. What they found out is that zucchini plants are quite plentiful and one zucchini plant takes care of about thirty families. People would joke that even in the summer when the temperature was 100 degrees F, people would roll their windows up in their cars so that people could not slip zucchinis into their back seats. It's important to know what the markets are.

When we're thinking about markets, we think too large. We think about a global market. We want everyone in the world to buy one of our products. That's a lot of people. I recommend that we start small and get our skills together. Some of the most successful organic farmers that I have worked with started out providing for themselves. Then you can sell to friends when you have surplus of what you gathered for yourself. Think about selling at farmers markets and look at traditional markets where Native people sell items such as smoked salmon, sweet grass, and juniper berries to mainland Natives and people no longer living in the area. Make contracts for amounts that you can handle. Take direct orders; an example of this is a business where people select their Christmas tree in July. The tree is cared for all year and then cut down at Christmas.

One of the biggest value-added characteristics you can add to a product is scarcity. If you say one per customer, people will do everything they can to get two. My mother doesn't eat at McDonalds ®, but she shops there to get the toys with the Happy Meals®. She'll go to different McDonalds® to get all the different toys for her grandchildren. Don't try to supply the world with it. This will also help with resource protection because if you're supplying a lot of it, you're not going to make much money per pound of it and then you're going to use up the whole resource. If you limit it and put that in your marketing system—say that you're only going to sell one hundred of something—then you'll create a waiting list. A waiting list will increase the value of what you have. If you can get as much as you want, then the item looses value. Supply those people who want it and who will pay a premium for it. People will pay more for what they want than for what they need.

Sustainability in marketing is as important as sustainability of the resource. Provide high quality with your product—set it up so customers tell others about it. Give your customer what they want and let them know all the work that goes into it. Educate them about what it takes to produce the high quality product you do. Great words that should be added to marketing programs are: fresh, wild, organic, sustainable, traditional, and authentic. Sit down with the Native Alaskans, Native Americans, or First Nations and see if they certify. Products that have been certified that they have been harvested, picked, and cared for in the way that Native peoples say it should be done have an added value that can not be gotten otherwise.

There are a lot of products out there and different ways of marketing. Do what you know and start out small. Get things real concise and deliver high quality products. If you don't deliver high quality, it can cost you a lot, especially with food safety. Look at what buyers want. Look at what can you do and what the ecosystem can produce sustainably. What can you do to add value to that?

Economic Opportunities Panel

Elstun W. Lauesen, Consultant, The Alaska Resources Commodities Trading & Investment Corporation (ARCTIC)

Biography - Elstun has worked in community and economic development throughout Alaska and the Pacific Northwest. He is a Former Economic Development Planner for the Alaska Department of Community and Regional Affairs. He has just recently ended a term appointment with Economic Development Agency in Washington State. During his Alaska tenure, Elstun undertook cooperative NTFP product development with Native organizations in Interior Alaska.

An Integrated Approach to the Commercial Utilization of Non-Forest Resources of Forest Lands

In 1984, the Tanana Chiefs Conference, Inc. (TCC) undertook an ambitious planning effort that took over a year to develop. The result was a Five Year Overall Economic Development Plan for the TCC region. The plan outlined over 60 projects and milestones to cover the five-year period from 1985-1990.

The TCC planning office identified commonalties among those projects which were based upon "renewable resources:" they have high subsistence or traditional use, their utilization is based upon existing skills, the resource is readily accessible, and the resource has some readily achievable commercial value. A large number of those resources are what are termed here as 'non-forest resources.'

It made sense to TCC to consolidate the development of those renewable resources in order to more efficiently achieve marketability. The Alaska Resources Commodity Trading and Investment Corporation, or ARCTIC, was formed to direct the research and development, planning and design, capital formation, marketing, and the product-to-market QA/QC needed to meet market specifications. ARCTIC was formed as a cooperative corporation with each village in the region capitalizing 100 shares of the company. Eventually, both grants and loans were secured to finance the needed working capital and equipment for ARCTIC.

ARCTIC's twin missions were to ensure that the production of commodities was 'appropriate' for the local culture (non-invasive and not competitive with subsistence/traditional uses) and to ensure that the distribution of benefits and burdens of ownership was 'equitable and fair'.

Case Study: Claire Burke Corporation, Minnetonka Industries (MI), Minnetonka, Minnesota. ARCTIC hired a consultant, Charles Walsh, owner of the Alaska Tea Company of Fairbanks, Alaska to assist in the research and development of botanical products. An advertisement in an herb commodities market report led us to contact Minnetonka Industries (MI). MI was searching for an alternative source of 'tree cones' to use in their 'Claire Burke' line of potpourri which they distribute through Nordstrom's stores, among others. Their existing source of cones, the South African Sugar Pine, was being excluded due to a boycott of South African products. The consultant secured a description of the South African cone and compared the form, size and weight of that cone with the Alaskan-grown cone. The size, weight and form of the two types of cone were close enough to warrant a contact with MI. After a preliminary discussion with MI,

we mailed a sample to them of our cones. After receiving them, MI telephoned ARCTIC and discussed price and shipping specifications. Upon receiving a purchase order for tonnage of the product, we produced specifications, a price list for freight on board (FOB) in Fairbanks, Alaska, deadline for receipt of shipments, shipper agreement, warehousing agreement and all of the numerous details involved in a consolidated shipping deal. We were required to deliver the product on three different dates. We agreed to invoice each shipment separately. We agreed on a price of $4.50 per pound FOB Seattle. Many trials and errors attended the startup of this project. The first shipment resulted in a net loss, the second, a breakeven, and the third a small profit.

Jean Wall, Associate State Director, Alaska Small Business Development Center
Former Owner of Alaska Wilderness Gourmet, Inc.

Biography - *Before her current role, Jean was a small business owner herself with Alaska Wilderness Gourmet, Inc.*

My company, Alaska Wilderness Gourmet, Inc., utilized Alaska's wild and domestic berries for the wholesale commercial production of jams, jellies, syrups, vinegars, and sauces. In 1986, I began seven months of research and spent $7,000 looking at the feasibility research before taking the step forward to develop products. I began my business in 1987. My company typically purchased 7,000 to 10,000 pounds of wild Alaska berries annually from individual pickers located across the state. I also purchased domestic raspberries from Mat-Su Valley growers.

At the time that I was developing my company, the Japanese market was quite big. I worked with buyers from Japan and learned what products they were interested in. I developed a business plan with Japan as primary market and with Alaska as the secondary market. A challenge showed up immediately: Japan's emperor died and commerce stopped for four months. I then switched the emphasis to my secondary market: wholesale sales to Alaskan gift shops.

Another challenge was the fluctuation in berry crops between collection areas and between years. The logistics for getting berries from remote places was difficult, and berries were collected from Ketchikan to Nome. Berry picking locations had to be diversified since it could be a bad berry year in some areas of the state.

Nurturing people to pick wild berries is very intensive. Pickers vary by year and new people have to be recruited and trained. The Exxon Valdez oil spill clean up employed a lot of people who would otherwise pick. Fire fighting was another source of employment that occupied my berry pickers.

My assets to sustain the business were flexibility, diversification of product and leverage of co-pack opportunities. As a business owner, I could contribute back to a segment of community by being flexible in scheduling production. This allowed for employment of good people, such as moms with kids in school. Product diversity was high with eight different berries and an array of fifty products with still more products to be developed such as fruit leathers and dried products. Other products were packaged in the facilities, including barbecue sauce and peach jam.

I believe my business was sustainable and viable through automation, good management and initial adequate capitalization. I sold my business assets in February 1995.

Nikolai Shmatkov, IUCN- The World Conservation Union Office for CIS (the Countries of the former Soviet Union)

Biography - Nikolai earned his MS in Forestry (1995) from the Moscow State Forest University, including courses and field studies on NTFP both there and at Suffolk University (Boston, MA). He subsequently worked as a consultant for the Department of Dendrology, Forest Selection, and Botany for the Moscow State Forest University at field research activities in the Vologda Region of Russia. Nikolai currently works for IUCN – The World Conservation Union Office for CIS (the Countries of the former Soviet Union) as an NTFP component co-coordinator for the IUCN-CIDA project "Building Partnerships for Forest Conservation and Management in Russia." The project component objective is development of NTFP-based sustainable business opportunities for local populations (mostly indigenous) in the Russian Far East.

Building Partnerships for Forest Conservation and Management on Kamchatka (the Russian Far East)

The International Project of IUCN-The World Conservation Union "Building Partnerships for Forest Conservation and Management in Russia" is funded by the Canadian International Development Agency (CIDA) and was started in October 2000.

The project objective is to create the conditions for effective partnerships between governmental and social organizations and to draw different social groups into the process of decision-making for forest conservation and management. The Russia-wide Project consists of three components: "Assessing the Management Effectiveness of Protected Areas", "Public Involvement in Forest Management", and the regional component "Building Community Capacity for Sustainable Nontimber Forest Products Harvesting, Monitoring, and Marketing on Kamchatka and Sakhalin."

The objective of the nontimber forest products (NTFP) component is "to build the capacity of local communities to establish ecologically, socially, and economically sustainable NTFP-based businesses through a participatory process."

The major partners of IUCN Office for Russia/CIS in the implementation of the NTFP component are the Indigenous peoples' communities and associations of Kamchatka and Sakhalin; NGOs (non-governmental organizations); scientific and educational institutions; other international projects and organizations, such as the IUCN Temperate and Boreal Forests Program, and the United Nations Development Program; natural resource managers; and local and regional authorities.

The NTFP component develops opportunities for the integration of Native people's interests and values, the priorities of protected areas, and sustainable NTFP-based small business development. We provide business and legal training; consult on small business development, including community-based enterprises; and support sustainability and monitoring programs.

The NTFP component was started only a year ago, but it has already done a lot to meet its objectives. Through workshops and active discussions with community

members NTFP products have been selected for further test marketing. Emma Wilson, the Project Consultant from the Scotts Polar Institute in England, has done a lot of work on building partnerships with local communities. The communities did a lot of independent work to select the products according to the proposed criteria, which helps to assess economic and environmental sustainability of a potential product. With the help of Tim Brigham, the NTFP business development consultant from Canada, several marketing trainings were provided to local communities. Local communities organized an herbal tea competition with tasting of various traditional and original recipes of herbal teas prepared by community members, including Russians and Natives. The competition turned into marketing research. Participants saw how popular herbal teas are and, on the basis of the questionnaire distributed, they made some preliminary conclusions on the potential of some specific herbal tea recipes for further small sustainable business development. Aboriginal community leaders believe that this competition was a very positive experience, and it should be turned into a regular herbal tea festival.

Finally, local communities for test marketing in Russia and abroad produced some samples of herbal teas, dried berries, and created the original hand-made packaging for these products. The test marketing this fall clearly demonstrated high interest in this product of Canadian and Alaska business people interested in further business partnerships with Kamchatka producers for marketing these products in North America.

One of the basic principles of the project has been a participatory approach to project development and implementation. This allows for more pragmatic decisions based on local experience and also gives the community a stake in the project. Although community economic development is the primary goal, the participatory approach has led to cultural benefits being given more attention in the project. The revival and sharing of indigenous knowledge – especially for younger people – has been identified by participants as a key concern, and will be a focus of educational materials developed as part of the project. Currently our local partners are developing publications on the role of NTFPs in material and spiritual culture of the aboriginal nations of Kamchatka. They are looking for partners to develop these publications further.

Breakout Session: Economic Opportunities

What	Who	When	Where
Alaska NTFP Listserv	CES	soon	near here
NTFP Association	Agencies and NTFP businesses	Saturday	Turnagain
Facilitate NTFP independence	NTFP Association	early	Alaska
Alaska NTFP Marketing Clearinghouse	NTFP Association	later	Alaska
Connect Alaska NTFP w/ Russian NTFP	Nikolai	soon	Moscow
NTFP Information Resources	NTFP Association, professional and commodity groups		
NTFP website			

Table 3 – Issues related to NTFP economic opportunities in Alaska.

Please note: the Economic Opportunities Breakout Session participants created this matrix for its priority steps. The session members went on to evaluate how easy or difficult they felt a number of additional steps might be to accomplish (see page 38).

Breakout Session: Economic Opportunities (Continued):

Possible Next Steps:

E = Easy H = Hard U = Umph

H	Unified Tribal – Public Lands Permitting
E	Business Skills Development
E	Business Retention & Expansion
H	Alaska Native certification of NTFPs
U	Small Business Finance
E	Small Business Clearinghouse
E	NTFP Organization – Association
E	NTFP Business Agency Involvement
	Clone Marlene
H	NTFP Harvesters Best Management Practices
U	Alaska Marketing "Mentoring"
E	Facilitate Independent
E	Access to Science and Information
E	NTFP List Serve
U	Monitor Local, State, Federal NTFP
E	Connect NTFP Association and Forest Managers
H	Research NTFP

Table 4 – Next steps for the Economic Opportunities Breakout Session.

Topic: Landholders Policies and Access to NTFP Resources

Figure 20 - Phyllis Woolwine
Panel Member

Figure 21 - Dave Kelley
Panel Member

Figure 22 - Roger McRoberts
Panel Member

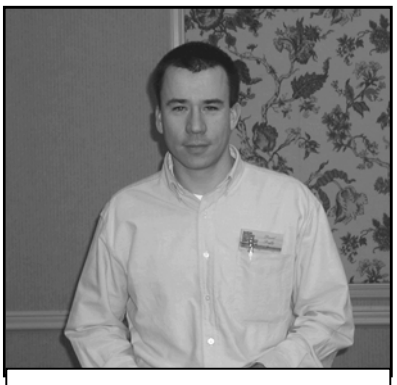

Figure 23 - David Duffy
Panel Member

Figure 24 - Bob Sam
Panel Member

Landholders Panel

Phyllis A. Woolwine, USDA Forest Service, Tongass National Forest Special Forest Products Coordinator

Biography - Phyllis is a botanist with 18 years of experience in the ecology and uses of plants native to Southeast Alaska. She is the outgoing Special Forest Products (AKA NTFP) Coordinator for the Tongass National Forest, and played a central role in developing NTFP policy for both the Alaska Region of the Forest Service and the Tongass National Forest. In preparation for this conference, she also surveyed the other major Federal landholders in Alaska for their policies on access to NTFP, and has summarized those answers as well.

Summary Information on Access to Nontimber Forest Products on Federal Lands in Alaska

NTFP Access in National Forests in Alaska

Subsistence Use: No permit is required for subsistence use by rural residents. The Forest Service in Alaska uses ANILCA (Alaska National Interest Lands Conservation Act) Title VIII as one source for guidelines, and applies them to NTFP. Therefore, subsistence use includes customary trade and barter by rural residents as defined in Title VIII. Subsistence is the top priority for NTFP use on National Forests in Alaska. This applies when resources are limiting, and also for planning harvest areas.
Personal Use: No permit is required for personal use of NTFP on National Forests in Alaska. The only exceptions will be where local impacts need to be mitigated. (This exception applies to Subsistence too.) Personal use is second only to subsistence for priority of use.
Educational Use and Non-Commercial Research: For other authorized non-commercial uses, a Free Use permit is required. Some NEPA (National Environmental Policy Act) review may be necessary depending on the nature and quantity of the request.
Commercial Use: Commercial use of NTFP requires a Forest Products Removal Permit. Bioprospecting of a commercial nature is included in this category. The minimum charge for a commercial use permit is currently $10, but that might go up depending on new national policy. The permitting process for commercial use is not currently a quick turn-around. A new program and policy, combined with necessary NEPA oversight and many concerns about commercial use, slow the process. Districts also must contend with low staffing and lack of experience with the program. NEPA scoping always includes tribal consultation.

Overall, the Forest Service approach to this program is to protect traditional uses, allow for development of new community-based industries to strengthen local economies, and prevent negative effects of NTFP harvest activities.

NTFP Access on Bureau of Land Management Land in Alaska
From: Mike Zaidlicz, BLM Anchorage office. Mr. Zaidlicz is involved in all aspects of permitting on BLM lands.
Subsistence and Personal Use: These two types of use are treated mostly the same by the BLM. Both are allowed and at this time neither requires a permit for most NTFP. Exceptions are firewood, posts & poles and house logs; these would require a permit, usually free.
Commercial Use: A charge permit is required for commercial harvest of NTFP. The process and permit varies depending on the size of the sale. NEPA clearance is required before a permit can be issued. This may take some time if the area is not already cleared. Also, a permit might not be issued if there are concerns about impacts to traditional use areas, or other conflicts.
Research Use: Research and bioprospecting would require a permit, usually a free use permit, unless there is a discovery and return to harvest larger quantities.

NTFP Access on National Wildlife Refuges in Alaska
From: Tony Booth, Division of Refuges, Region 7 and Ken Rice, Branch of Policy Development and Planning, Anchorage, Alaska.
Subsistence and Personal Use: Traditional gathering of NTFP for personal or subsistence (i.e., non-commercial) use is allowed on all refuges. No permits are required for such use.
Commercial Use: Commercial harvest may be authorized only within those portions of a refuge designated in the "Intensive Management" category. There are very few Intensive Management areas within the refuges in Alaska, and they are fairly small. Therefore, there is a very small portion of refuge areas where commercial use of NTFP might be permitted. Any commercial gathering or use of plants on refuge lands would require a special use permit and compatibility determination.

NTFP Use in National Parks
From: Steve Carwile, Compliance Officer for Denali National Park.
Personal Use: The Park Service's general provision is that no natural resources can be removed from the National Parks. However, individual park superintendents have the authority to make a list of edible fruits, including mushrooms, which can be used for personal use. The berries can be removed from the park for consuming, preserving and storing, but there is a limit to the quantity that can be taken. This is a park-by-park list, so those interested should check with the individual park's regulations. For such berry picking, no permits are required. No herbs or other NTFP can be removed from the park.
Subsistence Use: In accordance with Title VIII of ANILCA, local rural residents of National Parks can take larger amounts as needed of berries and other NTFP, including firewood and in some cases house logs. Amounts depend on what can be justified by the need of the subsistence users. No permits are required.
Commercial Use: No commercial harvest of NTFP is allowed on National Parks, except what might be considered customary trade & barter under Title VIII of ANILCA.
Research Use: Plants can be sampled for authentic research activities under an appropriate institution such as a university. Such use must be authorized under a

research permit. Bioprospecting might be permitted in this way as well, but would require NEPA clearance to proceed.

Dave Kelley, Permitting Program Manager, Southcentral Region Land Office, Division of Mining, Land and Water.

Biography - Dave has worked for the Department of Natural Resources, Division of Mining, Land and Water, Southcentral Region Land Office for the past 10 years. He has been very active in the development and refinement of the state's land use permitting program. Dave is currently the region's Permitting Program Manager.

The Division of Mining, Land and Water has limited experience issuing and administering land use permits authorizing the harvest of nontimber related forest products. In the past few years, the Southcentral Region Land Office (SCRO), one of three regional land offices has issued approximately three permits authorizing the harvest of nontimber forest products. There's probably a lot more activity going on out there, but it is difficult for three to four people in the permitting staff to actually monitor all of the activity taking place on forty million acres of general state land managed by the SCRO.

No permit is required for the private, non-commercial harvest of nontimber related forest products. A land use permit is required for the commercial harvest of nontimber related forest products. Commercial entities planning to harvest nontimber related forest products must complete and submit an application package consisting of the land use permit application, an environmental risk questionnaire, an operations plan, a USGS (United State Geological Survey) map identifying the location of the proposed activity and a non-refundable $100 application filing fee. If the proposed area of use is located within coastal zone boundaries, an Alaska Coastal Management Questionnaire must accompany the application package.

Each complete application is reviewed not only by SCRO, but also other state and local resource management agencies and communities that may be affected by the proposed activity. The decision to issue or not to issue a permit is typically the product of an analysis of the management intent for the proposed area of use, the applicable management guidelines and the comments and recommendations received during the review period. Fees are comparable to the Forest Service. Permits granting a commercial entity exclusive rights to harvest nontimber related forest products are rarely granted. If so, such permits can only be granted via a competitive process that gives other interested parties the opportunity to bid on the permit.

Commercial entities seeking a land use permit for the harvest of nontimber related forest products need to apply at least ninety days prior to the initial date they will need the permit. Applications are available at regional offices.

Roger McRoberts, Land Management Agent, Mat-Su Borough

Biography - Roger's background is in forest management. He was Resource Management Specialist for the Mat-Su Borough before his current position. Prior to working for the borough, he worked as a consulting forester, primarily for Native Corporations in Southeast Alaska and the Copper River Valley.

The Mat-Su Borough has between 300,000 and 350,000 acres of forested lands located north of Anchorage. The land is comprised of a large number of fairly small blocks along with a few larger blocks that are hard or expensive to access. In the Land Management Division, the policy and procedures for Land Use Permits are cumbersome and bureaucratic. One thing the Land Management Division would like to see come out of this conference is help coming up with some new ways to do things.

Unless all you want to do is cross Borough lands using a historic or dedicated trail, public access, or easement, you have to have a Land Use Permit. There are two different types of permits: a Personal Use Permit and a Commercial Use Permit. The deciding factor on choosing a permit is whether or not you intend to resell the resource or charge for the activity. The cost for a Personal Use Permit is $15. Permits are valid for seven consecutive days with a limit of twenty-one days in a calendar year. A Personal Use Permit is available at the Borough office and can be obtained at the time of your visit.

The process for a Commercial Use Permit is considerably more cumbersome. To start the process, you must complete an *Application To Purchase, Lease or Use Borough Owned Land or Resources* and pay a $25 application fee. The application is then sent through all other Borough departments for review and comment. After the comments are received, you meet with the Borough representative handling the application for a Pre-Application Conference. At this meeting you will go over the terms of your application, costs, and other conditions and requirements determined by the Borough. If you want to proceed under the terms and conditions described in the Pre-Application Conference, you are required to pay $125 processing fee to continue.

Most of the permits the Borough has granted so far are for house logs, access, easements, and trail rights. The Borough has not seen a lot of NTFP related interests. They have had a couple of people approach them with interests in applying for permits to harvest birch sap and one for conks. The Borough administration is really interested in NTFPs. They would like ideas about how to manage permits, appropriate fees to charge, and a way to minimize conflicts between different applicants and between applications for NTFPs and other uses.

Borough land use permits are non-exclusive. Borough code does not allow the administration to issue a permit that lasts for more than five years in length. All permit applicants must meet the Borough qualifications for a permit or use of Borough land. This means that you have to have paid your taxes, obtained a Borough Business License, meet insurance requirements, and have not failed to complete any Borough contracts within the past five years. The Borough often receives requests for permits that cover all land within the Borough boundaries. The Borough can only issue permits on Borough-owned land. If you're interested in an activity or a product to harvest, the Borough Land Management Division can help you find an appropriate place with the attributes that you need. They have maps and aerial photography showing Borough-

owned lands that can help you define an area for your activity and show you how to access that area.

David Duffy, CEO, Ninilchik Native Association, Inc.

Biography - David received his degree in environmental policy and assessment from Western Washington University in 1993. He subsequently worked with national tribal groups in environmental programs, and with the Pueblo Tribe in Arizona on natural resource policy and planning. In September 2000, David became Land Manager for the Ninilchik Native Association, an ANSCA village corporation that manages 101,000 acres. In December 2000, he was promoted into the CEO position. David's focus is on tribal land management decision-making.

Prior to serving as the C.E.O. of the Ninilchik Native Association, Inc. (NNAI), I worked in the Southwest United States where Native American culture, heritage and the sovereign status of tribal governments are widely recognized by the public, state and federal governments. Coming to Alaska and working for an Alaska Native village corporation, the most challenging questions that I face are associated with widespread misperceptions regarding the difference between Alaska village corporations, local tribal governments and various Native non-profit organizations.

It's unfortunate that, due to these misperceptions, the non-Native public, federal agencies, and state representatives are missing the tremendous potential of creating positive relationships with our Native community. Many non-Native individuals and government organizations do not understand the complex relationships between individual Alaska Natives, and generally tend to think that "Native is Native".

For clarification, the Ninilchik Native Association is a village corporation established in 1972 following the passage of the Alaska Native Claims Settlement Act (ANCSA). The majority of our shareholders are also shareholders of Cook Inlet Region, Inc. (CIRI) – an Alaska Native Regional Corporation. Many NNAI shareholders are also registered tribal members of the Ninilchik Traditional Council (NTC), a federally recognized tribal government. However, there is a big difference between being a shareholder and a tribal member. Similarly, there is a difference between being a village corporation shareholder and a regional corporation shareholder.

As a Village Corporation, NNAI received title to approximately 101,000 acres of land on the Kenai Peninsula and on the west side of Cook Inlet through provisions established via ANCSA. Additional land conveyances are also pending. The Ninilchik Tribal Government (NTG) does not have a significant landbase and, due to the unique and complex rationale behind ANCSA, and unlike tribal governments in the Lower 48, the NTC does not have a "reservation." While there is an inherent cultural connection between the village corporation and the local tribal government, the major difference is that NNAI is a for-profit corporation. Historically, the differences between NNAI and NTG were blurred, and often mixed. The distinctions between the corporation and the tribe are now well established, but we face challenges in explaining the distinction – especially when it comes to land ownership and access.

Although our shareholders are also Ninilchik tribal members, NTG does not hold authority over the village corporation, and vice-versa. Access to NNAI land (Native land) by NNAI shareholders and NTC tribal members is important – especially at the

local level. ANCSA lands are utilized by the corporation for economic development activities, such as timber sales, but are also utilized for recreation and subsistence based activities by our shareholders. As a small and semi-rural community with a significant non-Native population, access to, and use of, Native land is becoming a more and more critical issue. This issue is compounded by the increasing value of access to Native land, by non-Natives or the general public, for hunting and recreation.

In recent years, both the village corporation and the tribal government have made great strides towards cooperative land management. As time goes on, questions about who owns the land, who has the right to use it, and for what type of activities are becoming more and more prominent issues. However, at the end of the day, conflict from within the Native community holds no opportunity for progress.

Ninilchik Native Association has been involved with commercial timber activities since the late 1980's. As a result, nearly all of the commercial forest, over 35,000 acres on the peninsula, has been harvested. Commercial timber operation began prior to widespread spruce bark beetle infestation, predominantly focused on selective harvesting for graded lumber markets. As time went on and the encroachment of the spruce bark beetle became more apparent, Ninilchik accelerated its logging activities, ultimately transitioning from selective logging for lumber to an export pulp and chip market. Through this transition, the paces of timber harvest operations accelerated due to intense mortality of spruce stands and market availability.

Through these logging actions, road access to the Ninilchik Native Association lands has increased. Since the late 1980s, over 200 miles of road have been built and, from that, access to public lands, federal lands, and other private lands followed.

Today, with the decline of merchantable timber resources, NNAI is actively weaning our dependence on commercial timber operations. However, as a large private landowner, we hold an intrinsic responsibility to care for and manage our lands in a manner that promotes utilization of non-commercial resources – by and for our shareholders.

To accomplish this goal, NNAI has actively pursued development of positive and meaningful relationships with the Ninilchik Tribal Council. To this end, NNAI has recently entered into a historic "Cooperative Land Use Agreement" which authorizes and endorses the tribal government to represent the non-commercial interests of both NNAI shareholders and tribal members. The scope of this agreement promotes use and access to Native land for recreation, firewood, berry picking and other subsistence-based activities.

This relationship building is a means of fostering a clear distinction between the roles and responsibilities of a for-profit corporation and a government. As such, NNAI is not "in the business" of issuing regulatory-type access permits or policies, but we actively seek assistance from the tribal government to represent and protect access to native lands. Access permits are not really a function of a for-profit corporation and a large landowner. From one perspective, activities related to subsistence, access, or recreation, things that require a permit or some sort of authorization, are best held by local tribal governments, the local people, and tribal members themselves. The corporation's role should be focused on active business ventures that promote our ability to provide financial benefit to our shareholders.

Ninilchik Native Association has 64,000 acres on the Kenai Peninsula and the remainder of their lands are on the west side of Cook Inlet. From NNAI's perspective, our only viable solution to non-commercial land use and access is the development of solid relationships with the local tribal government, as well as with local non-native land owners: the borough, the state, and the federal agencies. NNAI is actively striving to integrate our contemporary land management policies with larger-scale planning processes, such as the Kenai Peninsula Borough's Comprehensive Plan. As such, a tiered land use plan will promote common adjacent land uses – development, recreation and even conservation. As a result, land use conflicts are being minimized, and development areas are being consolidated to maximize potential economy of scale.

As a private corporation, NNAI has neither jurisdiction over nor interest in serving as a law enforcement agency. It is not in the best interest of the Ninilchik Native Association's interest to hand out tickets, or to tell individuals to stay on or get off our shareholders' land.

Access to NNAI's land and non-commercial resources are influenced by local customs and local perception. Through promotion of increased awareness of the roles, responsibilities and the differences between various Native organizations, we seek to balance our responsibility to shareholders promote the tribal government's responsibility to provide services their tribal members.

Bob Sam, Sitka Tribe of Alaska

Biography - Recently the Shee Atika ANCSA Village Corporation and the Sitka Tribal Kayaani Commission have been coordinating traditional gathering of plant resources from lands managed by the corporation. Bob Sam, a Kayaani Commissioner and Tribal staff, discussed this relationship on behalf of the Tribe and Shee Atika. In addition to this work, Bob plays many other roles for Sitka Tribe and the community of Sitka. He as been a leader in the protection and preservation of historic grave sites, and is also a well-known traditional storyteller.

Growing up in Sitka, I have been with Sitka Tribe of Alaska all my life and have been very impressed with the tribal government. The tribal government is a lot like the federal government: the Chairman is like President of the United States and the tribal council members are like the U.S. Congress. There are tribal judges and social services to provide for the people. The tribal government is actively involved in issues of cultural heritage in Southeast Alaska since the constitution and by-laws are set up to address cultural and historical issues that are important to the people. That's one thing that is different from corporations which are set up to handle sales and development. A lot of times the tribal governments and corporations don't get along because of jurisdiction issues for things such as access to their resources.

The Kayaani Commission was formed by the Sitka Tribe of Alaska to discuss, document, and protect their traditional plants. I have been involved with the Kayaani Commission since the very beginning. One of the things I was very concerned about was access. From 1995-97, I served as a Council member for the Sitka Tribe of Alaska. I traveled across the United States meeting with other tribal governments. I met many American Indians across the country from California to Florida and began to see a picture forming in my mind. In California, weavers no longer had access to materials

because land in California was now in private ownership, and the people were not allowed to collect in those areas any longer. In New Mexico, American Indians were talking about tea; they were concerned that they no longer had access to go out and collect tea because many lands where they used to collect are owned by tea companies for commercial use. That produced deep concern about access by Native people.

When I came back to Alaska from national talks, the United States Forest Service had an interest in special forest products. The Sitka Tribe was approached and asked to provide a list to the Forest Service of their traditional plants for protection. They held a meeting and decided not to give a list of plants because they worried that they would leave certain plants out of the list. If they did that, those plants would not be protected. "If we lose access to our resources, our people will disappear. We will become extinct. We will no longer be part of the land. That is how important this is."

It is important to have a ceremony when harvesting plants; it is even more important than the scientific information about what to leave when the plant is harvested. The ceremony is more important because it's about human beings approaching the plant as a living being. When a person talks to a plant, that person has a continuing relationship with the plant. Talking mean to a plant will kill it.

The Shee Atika Corporation had been involved in timber harvesting on lands that are very important to the Sitka Tribe. Land was conveyed to people in the form of corporation land, and for non-corporation land, according to the Alaska Native Claims Settlement Act, "aboriginal land rights and title to this land is extinguished." This made for tension between corporations and tribal governments. As the Kayaanni Commission has developed and matured, the Shee Atika Corporation decided to log the forest close to Sitka. This created controversy because many people utilized that land for customary and traditional uses for things such as artwork and berry-picking.

The tribal government decided to start trying to bring corporation and tribal governments back together. They talked to the CEO of Shee Atika and set aside a day to go out to the land. They utilized a Memorandum of Understanding with the Forest Service to use the Forest Service boat to take elderly people out to Catlian Bay to gather resources from the land. They saw cottonwood trees growing on Baranof Island when cottonwood trees grow nowhere else. It was a unique experience for many of the tribal members to go out to this area. The area is important to a certain clan who had ownership rights of this area. Many of their ancestors had homes in this area, and some of the people were able to go out there for the first time since they were children. The Shee Atika Corporation has been very willing to work with the tribal government. They are very lucky to have their elders.

Breakout Session: Landholders Policy and Access to NTFP Resources

What	Comments
Determine how different agencies administer NTFP programs	**Where**: example: Tongass terms and conditions
Determine who has specific interest in NTFPs in Alaska	**Where**: in land management and economic development agencies
Interagency coordination. Strive for consistent policies	**Where:** State—Parks: Federal—Park, USFS, USFWS, BLM: Private — Corporation, Traditional **How**: Interagency MOU? **Comment**: Be aware of different missions and restrictions and laws
Who are the groups using NTFPs?	**Where**: business, households, agencies **Comment**: examples of projects: Who's Who in the Woods-Alaska Boreal Forest Council. Statewide database project: DCED
Set up an information program for land management entities/businesses/ Where do people fit?	
Consider addressing NTFP in land management strategies	
Develop a set of "Best Practices" and do workshops, demonstration projects	See Sustainability info
Set up a demonstration program for NTFP (i.e. Kenai 700 acres)	Re Kenai: is this a landscape?
Monitoring: before and after timber harvest	**Comment**: multiple use timber sale (take birch sap, bark, then cut)
Data sets: 1) Land status maps 2) Where is the resource? 3) Resource capability (maintaining/enhancing)	Re Inventory: See Sustainability
Develop motorized vehicle access	**Who:** USFS/DOT/DOF/BLM/BIA Re Inventory: See Sustainability

Table 5 – Issues related to landholders and NTFP in Alaska.

Topic: Social, Ethical, and Spiritual Aspects of NTFPs

Figure 25 - Michelle Davis
Lead Speaker

Figure 26 - Victoria Hykes-Steere
Panel Member

Figure 27 - Andrea Carmen
Panel Member

Figure 28 - Linda Christian
Panel Member

Figure 29 - Marla Emery
Panel Member

Social, Ethical and Spiritual Aspects Lead Speaker

Michelle Davis, Alaska Regional Coordinator, Native American Fish & Wildlife Society

Figure 30 – Michelle Davis

Biography - Michelle Davis has served for nine years as the Alaska Regional Coordinator for the Native American Fish & Wildlife Society, a national Native organization that supports tribal natural resource management. She has developed programs on water testing training, tribal uses of Geographic Information Systems and environmental contaminants. She is a Tlingit Tribe member, from the Eagle Moiety, Killer Whale House. Her grandfather is Ray Paddock Sr.; her mother is Shirley Davis, nee Paddock.

Among her accomplishments at the NAFWS, Michelle drafted a paper on traditional plant protection. This paper, along with her efforts to educate and raise awareness of the issues of bioprospecting in the traditional territories of Alaska Natives, led to the passing of Alaska Federation of Natives Resolution 00-48. This resolution supports a two-year moratorium on commercial harvest of plants to provide time for the Native community to negotiate sound protocols and research sound strategies for the protection their indigenous rights. It further urges the formation of an independent statewide Native plant commission to provide education and access to other international Native peoples' organizations and technical assistance to Alaska Natives regarding traditional plants.

My genetics involve much of Alaska's history: Aleuts, Russians, surveyors, midwives, fishermen, loggers, strong women, and bead-workers. I am a student of my entire heritage. Through my mother I am a Tlingit tribal member and I will reference some parts of that heritage. Though I live a fairly modern, urban life, my family still keeps with many of our traditional ways. On some mornings, the most knowledgeable and well-respected women in our family gather together the younger women and, sometimes, some of the children. It's always before 9 a.m. Then we go forth into the traditional hunting and gathering activities of our clan. I believe your people call this "garage sale-ing."

I have been very proud to serve with the Native American Fish and Wildlife Society (NAFWS). I have also been privileged to work with many native tribes throughout the state of Alaska and the Lower 48 states. Often the larger discussion contains key elements of traditional environmental knowledge and wisdom (TEK).

During the time I have watched the discussion of TEK go forward, I have seen some very subtle changes in the interactions between, and the thinking of, tribal communities and agencies. I've been to many, many meetings. Two themes have emerged. Agencies grapple with this: "How do we 'use' TEK? How do we gather it? How does it fit with our plans and our missions?" Tribal communities struggle with having their knowledge 'respected' and taken at its full value by the agencies. I have come to believe that a lot of the conflict is due to an inherent dichotomy in worldviews. There's a structural difference at a deeper level than the conversational level, beyond what happens at the tables where we have all sat.

I wish you to consider what I am beginning to think of as "colonization of knowledge." My Webster's dictionary defines colonization, in part, as " A relationship

with another nation where one achieves economic gain from the resources of another." How does this fit with TEK? Currently, in Alaska, researchers, scientists, students, and ethno- anythings — botanists, linguists, musicologists — work with, and derive a large part of their work from, the intellectual properties of Native peoples. It's very easy when you're doing research to slip into "colonization" thought: to look at TEK as a "product" or a "tool." When a researcher asks: "How can I extract this information from the community?" (s)he is looking at TEK as a resource to be extracted from the community. Gold is extracted. Fish are taken. Plants are gathered. Knowledge can also be gleaned from a community. In so doing, it is what I think of as "colonization of knowledge."

It is colonization of knowledge when elders are interviewed and the full importance of their wisdom or its importance for their communities is not recognized or acknowledged. Here I would like to introduce to you a Tlingit belief: "*At 'oow*." As Nora & Richard Dawenhaur say in For Healing Our Spirit, "This concept underlies all dimensions of Tlingit social structure, oral literature, iconography and ceremonial life. *At 'oow* means literally "an owned or purchased thing." It may be land, a place such as Glacier Bay, a heavenly body, an artistic design, an image from oral literature, such as Raven cycle episodes. It may be a story about an ancestor. Through time and correct use *at 'oow* is acquired: a special gravity, a spiritual value and a meaning that transcends the object. It cannot be seen but it can be sensed. It is known by the people who have the responsibility and privilege of carrying it."

Cultural knowledge is "*at 'oow*." Different nations may phrase this differently but it is the spiritual heritage of Native peoples. Its use should be very carefully considered, however it is used. Last summer I was working on some reports when my phone rang. A woman from California was calling the NAFWS to see if we had a group of Native Americans who would help her gather herbs and tell them what they were for. We had an interesting conversation and, as we talked, things unfolded. She works for a very large organization that is looking at doing some sizeable extractions, which I found frightening at two levels. First, they were looking at the bulk plant for teas and traditional methods. The other part that was scary was that they were making their decisions based on a series of elder interviews. They had set a way of extracting, to spin down the plants through a series of bioassays and see what "lights up." I thanked that individual deeply, because she gave me and others an idea of what is happening.

There is an example of an effort to extract knowledge in its largest form. We can all agree that this is not a good thing. When something so valuable is taken, there has to be an equal exchange. This concept of full equality is something that people will really have to grapple with. I've talked with people who are coming up to do their Ph.D. thesis about this, and we've had some really long pauses in those conversations. Consider: If you're going to write a Ph.D. thesis and it's going to really make your career — it's going to be cited in your literature and probably get you a nice job some place — what will you give back to that tribe, to those people who gave you that information? It calls for integrity in the exchange. It calls for a higher level of awareness, for all of us in that exchange because it's so easy to slip into this pattern because people are so kind, so helpful.

I have some ideas on how to achieve this equality of exchange. A researcher should:

1) Give service to the tribe prior to commencing work. It should be a nice long period. The people, who are doing the research, they have gifts. They are well educated. They can help tune-up the computers, write proposals, do some bookkeeping. They should come in and get to work, at the service of the tribe, not at their own service.
2) Train young people during the exchange. The researcher can train and mentor young people; provide from their skill set. A cultural anthropologist could teach young people how to conduct interviews to help document tribal history. If someone comes with mapping skills, they can teach young people how to do ethno-mapping. Building capacity and working with the best resources that our nations have, which are the young people, is my second recommendation.
3) Assist and serve far into the future, as long as that paper is on their resume they should be giving time to that community. The community might need a really large economic development grant, or do important cultural preservation work. So it's a real commitment to take on this relationship. That's what it comes to — a relationship — what is being given when traditional knowledge is being shared is beyond price.

For the tribes, I have seen tremendous benefits from tribes that are documenting their own knowledge:

1) One tribe documented key and sensitive habitat areas — spawning, rearing, key migration corridors — and areas that had changed over time due to local development. Their elders won't always be with them, but the maps that they made will be. They'll be able to protect key habitat areas based on their knowledge: the young people in the tribe can do that.
2) TEK can help a tribe, when they do their own documentation, to reach their self-determined goal. There are some wonderful examples in Alaska of how to do that. I respect those who have done, and who are doing, it. The young people bring so much to this.

Social, Ethical and Spiritual Aspects of NTFPs Panel

Victoria Hykes-Steere

Biography - Victoria is of Inupiaq heritage, born in Kotzebue but from Unalakleet. Victoria holds a Juris Doctorate from the University of Iowa College of Law and an LL.M. in International Environmental Law from University of Washington School of Law. She has an undergraduate degree in Economics from Colby College in Waterville, Maine. Recently, Victoria traveled to New Zealand to talk with the Maori people about indigenous knowledge of plants and forests being communal property that belongs to no one generation.

"It wasn't what I wanted or dreamed
To stand alone facing rooms full of strangers.
Grandmother, you sent me out to learn to fight a new way,
In a language full of thoughts and values very different than our own;
I am forever your daughter
Trained to dream to believe to hope
A warrior born for this time
When words, regulations, laws and agency rulemaking
Threaten to destroy all that is sacred to a real human being."

One of the things that is so fascinating to be like me, a half-breed, is you're always aware of the consequences of your blood. I loved my father. He's a good man. But ever since I was a child, I was painfully aware that his world was ripping apart mine. It was attacking the foundation of our very being. It was destroying our soul.

People used to tell me when I was a child that I had an old soul. I never quite figured out what they meant. The elders loved me. They told me stories. They told me things that I've never repeated because it doesn't belong to me. It belonged to them. But I will forever be their child. And I will love them. And I will remember them. And as long as I remember they live. And we won't die.

It is very difficult for people of another worldview to comprehend the impact they have on other human beings. It is very easy to forget that, when we bleed, our blood is red just like everyone else's. My first language was Qawiaraqmiut. The worldview in that language is totally incomprehensible to others because that whole language is based on a knowledge of a place, of an area that was our homeland, forever. Our memories are tied to the People of the Sand. That's what we are called: the "People of the Sand" because wherever we lived, no matter how far inland we went, we literally carried gravel, well the stones, not the sand, but the stones actually, and lined our villages with them. The women carried them, by the way; it wasn't the men.

So, that is part of who I am: the understanding of that place. When I see it my whole being breathes. It's a different feeling. I know I belong. And since they knew they would send me away, they would tell me to look out and weave pictures in my mind that would have to last me forever. Because, see, I was never meant to stay. And they told me that when I was very young — I was three — that I would have to go to college and then to university. That I had to learn how white men thought better than they understood themselves or we would die.

What you would call your great-grandmother told me that. In our way, she was my grandmother, and I will always be her daughter. She was, and still is, the most important person in my life. I have children that I love very immensely, but all I can hope to do is to turn them half as well as she turned us, because she taught us to dream. And that everything is possible as long as we believed.

She was utterly fearless and very, very competitive. One of the first things she taught me was about plants in the springtime. But what she taught me isn't mine. It doesn't belong to me. It belongs to centuries and centuries of people who used the same plants — mustards, sura [tender new leaf buds of diamond-leafed willow*, Salix pulchra* L.] — all those things. They're part of who we are. They're part of our understanding of the world. How we frame the world is very different than the western view. There aren't categories. There are no inanimate objects. Everything is alive. Everything has a soul.

So I love rocks. And one day my grandfather told me that maybe the rocks I took home so diligently were really meant to stay where I found them. I had a huge internal conflict, so I began to make everyone laugh every time I found a rock. I would sit, look at it, and I would have this little conversation; about how it really wouldn't mind coming into my house and living with all my other rocks, where it would have many, many friends, all waiting very happily for it to come home with me. And sometimes it worked and sometimes I got the feeling that that rock wanted to move and I would keep it.

That's a totally different way of knowing. It's a totally different way of understanding who you are. I am no more important than a seal, a fly or a mosquito, and by the way I hate mosquitoes. But they're there. And they belong there just like we do.

So when we come across people who are seeking our knowledge, even though it's not ours, it belongs to all of us, it's very difficult for them to say 'no.' And when they share, which is very important in our societies, it's a giving, it's a good thing. But they don't always understand the consequences of that giving. They don't understand copyrights. They don't understand that someone can claim that information for themselves — ownership. And a lot has been just handed away and it has made fortunes for people.

When Michelle (Davis) got that phone call, she asked me to write a plant paper so I did. But the funny thing about doing things like that is it doesn't capture the real problem. It doesn't capture our souls. It doesn't capture the amount of pain we go through when we're continuously being dehumanized and devalued, our worldview, our interactions with ourselves and each other. And when I say 'each other' I also mean the animals and the plants. My grandfather sent me to the trees, to listen to them. He sent me to the ocean, to listen to them. And he sent me to listen to the wind. And all this is a totally different form of learning. It's not taught in your schools and it's not invalid. There is knowledge there. It isn't yours and it's not inaccessible to you just because you come from a different worldview. It just takes a different frame of reference to find. And I hope those of you who are in the agencies will take the time to learn.

Marla R. Emery, Research Geographer, USDA Forest Service, Northeastern Research Station

Biography - Marla has been studying the role of NTFP in the lives and livelihoods of the people who gather them since 1995. In Michigan's Upper Peninsula she conducted the first comprehensive study of U.S. NTFP. She is currently looking at the impact of land use and land ownership change on NTFP use in New England. Publications include papers and book chapters on the social values of NTFP, their role in household economies, local ecological knowledge and stewardship practices of gatherers, and the history of NTFP use in northeastern North America.

Wild Plants and All Our Other Relations: The Ethics of Using, Developing, and Managing Nontimber Forest Products

Human beings have probably been using NTFPs for as long as people and forests have existed in the same places. But something is changing. Today, more people are interested in NTFPs than have been for several decades, at least. Also, different kinds of people are interested for different types of reasons. I would like to contribute to the discussion of the future of NTFPs by sharing what I have learned from the dozens of people who have been kind enough to invite me into their kitchens and take me out into the woods of the northeastern United States and tell me about what they gather and what it means in their lives. Their lessons have much to teach us about the relationships that have made NTFPs work in the past and can help guide our actions in the future.

In the case of NTFPs, I believe that there are two kinds of important relationships: the relationships between people and plants and the relationships between people and people. The importance of relationships between people and plants is clear from the fact that many cultures, disciplines, spiritual and intellectual traditions have developed rules to guide those relationships. In more than six years of research, I have been struck by the similarities between the harvesting rules observed by conscientious gatherers, conservation-oriented field guides, and esteemed scientists like Nancy Turner. All clearly have similar intents – to promote a relationship between the gatherer, the act of gathering, and the plant materials being gathered that ensures the survival of both.

One of the things we often overlook when we talk about conservation of NTFP species or their potential as economic development opportunities are the relationships between people, the social relationships, that are at the heart of the way NTFPs are harvested and used. Yet the relationships between people, the rules that we set up to govern those relationships, and the way that we organize the economics of gathering have direct and profound impacts on both the social and ecological results of NTFP use. For that reason, I'm going to talk at greater length about four types of social relationships surrounding NTFPs.

1) *Preserving and Transferring Knowledge* - Knowledge is shared through social interactions. There is a respectable body of scientific knowledge about NTFPs that we share through the written word in books, papers, and on the Internet. By far the greatest store of knowledge about NTFPs exists in people who gather and use them. The most common way of sharing NTFP knowledge is through older people teaching

younger members of their families and communities. This hands-on method also imparts information on how to survive in a particular place and helps to ensure cultural as well as physical survival.

2) *Terms of Access to NTFPs* - Another key set of social relationships are the arrangements we make to allow or prohibit people from obtaining and using NTFPs. These may be informal or traditional agreements, formal laws or statutes. Permit systems are formal ways that access to NTFPs is controlled on public lands. Permits can affect access to NTFPs in at least three ways. a) The price of a permit may put an income filter on who can legally gather an NTFP. b) The place(s) where gathering is allowed influences who has access to NTFPs. c) Any season that is established obviously affects when people may have legal access.

3) *Conditions of Labor* - Traditionally, gathering has been a flexible activity that fits in with other work and responsibilities. Within the boundaries of plant seasons, people decide when they go out, for how long, how they work, and when they stop. However, we can create social relationships that reduce or eliminate this control. For example, if permit or lease prices are set too high for the people who actually do the gathering, they will be bought by others who are then in a position to make those kinds of decisions about the way the work gets done. If their interests are different from a gatherer's, they are likely to make different decisions about things like what weather people work in, how long they work, the tools and techniques that get used, and how much gets harvested. People for whom the flexibility is important -- women with small children, the elderly, people with disabilities -- are likely to be left out of such arrangements.

4) *Distribution of Benefits* - Throughout the world and throughout history, cultures have developed systems for distributing the benefits of various NTFPs. In the central Himalayas, the fallen leaves and thin green branches of trees in community forests were traditionally reserved for widows. Nancy Turner's research in the Pacific Northwest shows that although families and tribal groups had their own NTFP patches and territories, they often shared with others who were suffering from a shortage. For the last century or so, in the United States NTFPs have been a resource for those who have been left behind by the market economy and/or are struggling to maintain special cultural practices. Changes in the terms of access and conditions of labor will likely lead to changes in the distribution of benefits from NTFPs.

Clearly, today, in the United States the kinds of relationships we cultivate with plants and between people will determine the social and ecological affects of NTFP usage, development, and management. The lessons from my own research and that of others, but most importantly the experience of gatherers, suggests an ethical compass for charting our future actions. In terms of NTFPs, an ethical relationship is one that consciously promotes the survival and even the thriving of both people and plants, especially the most vulnerable. Of course, this isn't an easy proposition and there will be times that the welfare of people and plants or the welfare of different groups of people will appear to be in conflict. We will still have to make hard decisions and engage in some vigorous negotiations with each other. But as we do so, we can check with this compass to be sure we that are tending in the right direction.

Linda Christian, Forester, USDA Forest Service, PNW Research Station, Alaska Wood Utilization Research and Development Center

Biography - A forester and certified permaculturist, Linda first became interested in plants and the forest as a child growing up in the redwood and oak-laurel forests of California. Her Norwegian grandmother taught her first lessons on land ethics and respect for all things growing. Linda has spent her 26 years in forestry roaming old growth forests, the last 19 years in Southeast Alaska. Her interest in the spiritual values of the forest came from this experience and from extensive reading on the subject, especially the writings of Jane Goodall.

Today I want to talk about – the forest itself as a Nontimber Forest Product – the spiritual value that an intact forest has to its community. I would like to quote Jane Goodall, a Cambridge educated woman that spent years in the forest of Gombe National Park in Africa, "I have been privileged to know the peace of the forest. The forest – any forest — is, for me, the most spiritual place."

My own experience has been similar. My mother used to tease me that I went to the woods to pout. As a child, I realized the renewal that could be found in the local oak forest. While working as a forester, I was in the woods for days at a time, alone. This is when the true value of the forest came into my own consciousness. There was something comforting about being with the trees. One day I realized I was standing a long time, taking in the beauty of my surroundings. Time stood still and I felt a joy, a connection, I had never felt before. I later found out that this feeling is called a "peak experience," and in the sociological literature, this is an accepted behavior or experience in a wilderness setting. Again I would like to quote Jane Goodall, describing her own peak experience: " Lost in awe at the beauty around me, I must have slipped into a state of heightened awareness. It is hard — impossible, really — to put into words the moment of truth that suddenly came upon me then. Even the mystics are unable to describe their brief flashes of spiritual ecstasy."

I would like to bring up a movement that is occurring in traditional western religious circles. I do this because some feel this is nature worship and therefore pagan. There is a group called the National Religious Partnership for the Environment. It is the nation's largest interfaith coalition. Member groups include Protestants, Jews, Catholics, Eastern Orthodox and evangelical Christians. This group is acknowledging the spiritual value of the forest and as a result they call themselves ecofaith activists. Their Executive Director, Paul Gorman, has been quoted, "This isn't just another issue for us, it goes to the heart of what it means to be a faithful Jew, Christian or Muslim." Again Jane Goodall, "I realized that the spiritual power that I felt so strongly in the wild and beautiful world of the forest was one and the same with that which I had known in my childhood, when I used to spend long hours in ancient cathedrals."

Another concept in sociological literature is called the sense of place. Forests near towns have a value to the town; be it a place to pick mushrooms, picnic or a wonderful vista. These forests represent something important to the towns' people. So having talked about the traditional western religious and sociological views I would like to point out some people do have other ideas about the value of the forest in non-western ways. These include collecting the essences of the forest to be sold as formulas. There is a product sold here in Alaska, made in Homer, called Soul Support, which besides flowers, includes environmental essences. I do not know this particular

formula, if it includes forest essences, but wanted to point out that a formula could. I have participated in creating essences, and they all came from the forests around Sitka. This process is just taking the essences or energy field, vibration, whatever term resonates with you and through ritual transfers to a mother water. These essences themselves are a nontimber forest product and are sold throughout the world.

Another concept I would like to share is some feel trees themselves have spirits and a cosmic role. There is a story of a place in the Australia outback. A group of indigenous people would come everyday to a newly built store and set for a while in a circle. The storeowner asked why they did that and they said an ancient tree stood there before the store and they came to still feel the energy and to gather as they always had in that spot. Some feel the spirit of the tree can give guidance – give a small gift to the tree, say some tobacco, mentally ask a question – sit with the tree and the answer will come. Others just find the forest peaceful and soothing and ask nothing from the trees, but relaxation. I walk in the forests of Sitka after work for all these reasons and do ask guidance from a few favorite trees.

The cosmic roll of trees in the big picture of the universe is more complex, but in simple terms they act as transformers of healing cleansing energy between the universe and mother earth. Whatever your individual belief, most agree there is something special about the forest – and just the act of being in the forest – can be a Special Forest Product.

Andrea Carmen, Executive Director, International Indian Treaty Council

Biography - Andrea was a founding member of the Indigenous Initiative for Peace, and has worked extensively with indigenous peoples throughout North, Central and South America on human rights and environmental justice issues. She has worked extensively with the United Nations toward redress of human rights and treaty violations, the development of mechanisms for wider participation by indigenous peoples, and strong international standards. Andrea lives in Palmer.

Thank you for inviting me and for being here today. I especially thank the Native peoples of this land, if there are any representatives of any of the Athabascan peoples who are here. Let's remember this was somebody's fish camp; this was somebody's forest at some time.

When we talk about "hidden forest values," I want us all to take just a moment, close our eyes, and be conscious of something that you do all the time. Inhale and exhale: pay attention to that for a moment. Recognize the contribution of the forests and the plant nations to our moment-to-moment survival. Recognize the relationship that we have with them, and the profound value that they contribute to us apart from any discussion of economic development or any other aspect of that relationship. I ask that, when we talk about our responsibilities to the forests and to the plant nations and to those who've been given a sacred responsibility to protect them, that we remember this obligation that comes from the simple act of breathing that we do.

When we talk about indigenous spirituality; the words that we place on things may sometimes be a barrier to our understanding. Spirituality in an Indian point of view is, ultimately and basically, very, very practical. When the International Indian Treaty

Council was formed in June 1974 at a gathering of about 5,000 indigenous traditional representatives from throughout this continent, one of the mandates that the elders gave to the newly formed organization was to seek an international voice. Of all the nations gathering around the table at the United Nations, only the indigenous nations of this hemisphere were not represented. We needed to go to seek a voice about our treaty rights' violations, our human rights' violations, our land rights and loss of culture and language. We also had something basic and fundamental to contribute to the discussions on what are human rights and what is survival of us as the human nations together, the family of nations.

But the language of human rights was a stumbling block to our contribution of the depth of our understanding. I have been all over this world to talk to Native peoples. I've asked time and time again, everywhere, do you have a word in your language that can translate as the English word "rights?' And I've never found an indigenous people that had that world. In our language, I'm a Yakima Indian, we have a phrase that means "our people's responsibility to the Creator." Native peoples talk about responsibilities, rather than rights; yet the language of the international arena is the language of human rights. Again, it separates the rights of humans from the rights of the created world.

This takes a very practical turn when you look at developments that have been important environmentally but not so beneficial to indigenous peoples, such as one of the main products of the Earth Summit. The "United Nations' Convention on Biological Diversity" recognizes a collective commitment of the countries and member states to preserve the rapidly diminishing diversity of biology. This is what we call the 'sacred web of life' or the 'sacred natural world.' There is recognition in this document of the knowledge and the relationships of indigenous peoples to ecosystems where there's a lot of what's seen as collective benefit, such as forests. The Forest Principles are a key part of the Agenda 21.

But there's nothing in the Convention on Biological Diversity recognizing the rights of indigenous peoples or their responsibilities to protect the relationship with the plant peoples of this world. There's mention in Article 8.J. of "an equitable sharing of benefits with the indigenous knowledge holders" when these biological 'resources' are developed. But there's nothing in the Convention on Biological Diversity which says that indigenous peoples have a right to prior informed consent; that anybody needs to ask them first, "What can we develop here on your traditional lands? What's sacred and should never be under any kind of discussion on economic development for economic benefit?"

There's nothing in international law whatsoever that protects or guarantees the right of the traditional people who have the sacred responsibility under their law to protect these relatives for themselves and for future generations. There's nothing that gives them the right of prior, informed consent. And that's one of our big struggles under international indigenous unity; working with bodies such as the World Trade Organization. I have some documents I can leave and maybe copies can be made: The "Indigenous People's Seattle Declaration" that was made by the indigenous delegates who attended the meeting of the World Trade Organization that ended with such an uproar. It took the attention, in some ways, from some of the positions that were taken there that need to be looked at; that talked about the harm to indigenous peoples of

what's called the 'trade-related intellectual property regimes' of the World Trade Organization. They have no guarantee, whatsoever, of any kind of rights that can be asserted by indigenous peoples who are traditional knowledge holders. This excerpt from Article 1 of the United Nations' "Declaration of the Right to Development" states that "peoples cannot fully realize the right to development without the exercise of self-determination and full sovereignty over their wealth and natural resources." This is a piece that gets left out a lot of times when we're talking about maintaining respectful relationships; this aspect of recognition of sovereignty and the rights of indigenous peoples to traditional knowledge.

For hundreds of years our traditional knowledge was discounted as superstitious or some kind of mumble jumble. And suddenly, in the last few years, the knowledge of indigenous peoples around the world, not just here in Alaska, is being sought, without recognition of this issue of prior informed consent and sovereignty rights over resources. I could list medicinal plants, forest products of Native peoples from throughout this hemisphere that have been patented by outside forces. To remedy this, over 300 different organizations, nations and indigenous peoples from around the world have signed the "No Patenting of Life Declaration." It says that until the human, cultural, spiritual and land rights issues of indigenous peoples can be resolved, no patenting— of any life form, or derivative, including seeds, genetic pieces or products, or medicines created by plant knowledge — should be allowed. There needs to be a real negotiation that starts with the principle of prior informed consent that respects the spiritual and ethical relationships of indigenous peoples.

The breakout session for the Social, Ethical & Spiritual Aspects Panel was combined with the breakout session for the Traditional Uses Panel at the request of the breakout session participants. The report of the combined breakout session is provided on page 15.

Topic: Secrets to Success—Small Business Startup

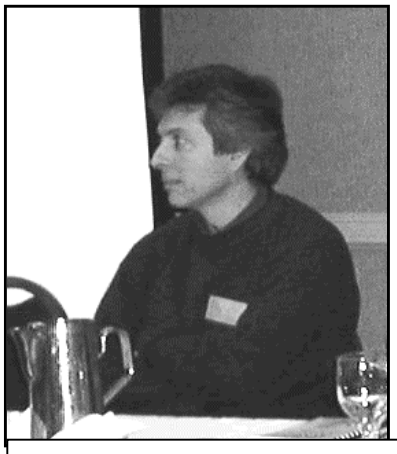

Figure 31 - Tim Brigham
Lead Speaker

Figure 32 - Stan Steadman
Panel Member

Figure 33 - Marlene Cameron
Panel Member

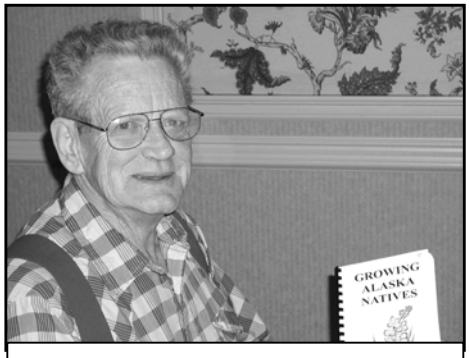

Figure 34 - Dick Baldwin
Panel Member

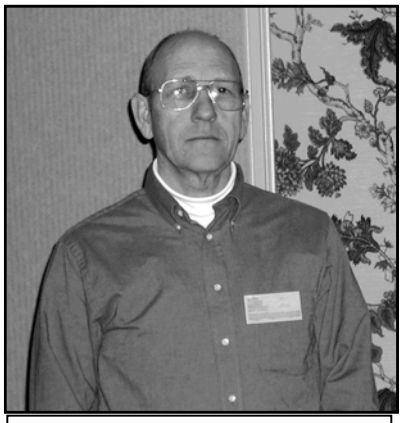

Figure 35 - Rod Hilts
Panel Member

Secrets to Success—Small Business Startup Lead Speaker

Tim Brigham, Consultant

Figure 36 – Tim Brigham

Biography - Since graduating with a MA in Geography in 1994, Tim has been involved in a number of projects focused on economic development strategies for rural areas, both in British Columbia and internationally. Tim's primary interest is in consulting and training on business development in the area of nontimber forest products. He is the chief author of both the ten-day course entitled "Goods from the Woods: Developing your Nontimber Forest Products Business" and of the accompanying handbook. He is currently working on other training and business development initiatives in the area of nontimber forest products in British Columbia, Manitoba, and the Russian Far East.

Among his many contributions, Tim is currently involved with Nikolai Shmatkov in the NTFP component of the joint Russian-Canadian project "Building Partnerships for Forest Conservation and Management in Russia." He is a Business Mentor for British Columbia's North Island Nontimber Forest Products (NTFP) Demonstration Project. Tim is widely sought in Canada and internationally by government and private concerns as a speaker and consultant in the NTFP industry.

The Nontimber Forest Products Industry: Some Secrets to Success

The NTFP industry is often treated as a single industry when obviously it's not. The industry is made up of a number of separate industries spanning a broad range of product areas – foods, medicines, decorative plants, etc. – so what holds true in part of the industry may not hold absolutely true for others. However, there are a number of common threads running through the industry that do allow for some generalizing on the 'secrets to success' for NTFP businesses.

Finding Your Niche - The first step to finding your niche is determining where you can and want to fit into the industry. There are many different ways to participate in the industry – such as a harvester, processor, buyer/exporter, etc. Many people play multiple roles. Finding your niche in the industry involves assessing the opportunities open to you. Most successful people in the industry also focus their efforts on a few products, at least to start with.

Before you go too far with developing an idea, it's worthwhile asking yourself a few questions about the product you're considering. Ask yourself:

- In what way do you want to be involved in this industry & why do you want to do it?
- Raw material supply. Where will you get raw material from and what's the access and cost like? Is the quality of the material you can obtain adequate to satisfy your buyers?

- What processing/handling is necessary? What are the costs involved in your processing and handling?
- What markets are available to you? What are the transportation costs? What were prices like in the past and what is the over-all trend for prices?
  - How much capital do you need to get started? What regulations do you need to be aware of in your business?

The likely result of going through this process and asking yourself a lot of questions is – a lot more questions. Thoroughly research whatever you're looking at getting into before you start harvesting a bunch of product or sinking cash into a venture.

Researching Your Products - Developing good research abilities is really essential to the success of your business. Unfortunately, as some of you may have already discovered, good information on your part of the industry isn't necessarily available.

You're going to want to know where to find product and which products have the most potential for development. You may have a product in tremendous abundance, but it may not be worthwhile to produce because of marketing problems or costs, inadequate quality, etc. As early as possible you want to find out where different plants grow, when you can find them, and what the customers are looking for. It is important to get the scientific name down. Common names vary from place to place, so using the scientific name is usually the best way to get solid information on a plant and its products.

So how do you go about finding out what you need to know? The information you need is not necessarily something you'll be able to find in the library. Going to a conference is often a phenomenal opportunity for learning. Good, well-written handbooks for plants and mushrooms are essential. The Internet can be a good source, but not everything on the Net can be trusted. The Forest Service or other government agencies have almost certainly done some work of help to you. It may not necessarily be specific to NTFPs at all, but if there is information on plant associations, or descriptions of which plants grow in which forest type, this can be very valuable information. Government employees are also obviously the right people to speak with about regulatory questions. And if you're exporting, embassy employees can provide key information on international markets. Buyers are often happy to give you a few pointers, especially as they're usually looking for someone to provide product. Harvesters can obviously be excellent sources of information with only one problem – they may not tell you anything. The best way to learn is often with the 'learning by doing' approach; you don't have to know everything to start small by selling to local buyers. One of the keys to success is having a passion for the business and an interest in learning as much as you can.

Developing Relationships (Buyers & Other Stakeholders) - Some of the most successful NTFP entrepreneurs I've met have worked very hard at developing relationships that are beneficial to their business. These are relationships with their buyers, land managers and owners, and other suppliers/harvesters.

The first important lesson is: BE DEPENDABLE WITH BUYERS! You must provide what your buyers want, when they want it. Figure out what you're capable of

and don't promise what you can't do. Consider taking the time to develop positive relationships with land managers. If you don't annoy or anger them, they can be very helpful, and a great source of information about the local area. The relationship with communities is vital. If you're trying to get an enterprise going without community support, you can pretty much forget about it succeeding.

Don't waste a lot of time worrying about someone stealing your good idea; run with it and take others along for the ride. As long as you concentrate on quality, you're less likely to lose business to lower cost, lower quality competitors.

Responsible Harvesting - The industry depends on responsible harvesting; anybody getting into this business should realize there are going to be questions about many of the products you might be harvesting. This is also not a new concern, but one that has followed the industry for at least a century.

Demonstrating your ability to behave in a responsible way in the woods can only help your business AND the industry. Don't harvest where you shouldn't, try and minimize the ecological and visual impacts of what you're doing, and practice as close to no trace camping as you possibly can. The industry already has some credibility problems and doesn't need more. Demonstrating an awareness of sustainability may also provide benefits in the marketplace. If you plan to pursue certain markets – probably the most lucrative ones – there are going to be questions about harvesting impacts.

Creative Marketing - The effective marketing of your service or product is obviously key to the success of your venture. If you're getting into this industry it's important to be aware of the nature of the markets for NTFPs.

One of the keys to success is to stay on top of your market research. In a dynamic industry like this, things are changing all the time. Change means some products will diminish in importance, while new opportunities open for those who stay on top of the changing marketplace. Consider developing a marketing plan. A well-done marketing plan will provide you with a tremendous amount of information. In marketing, focus on what is special about your product. Play on the 'wild' aspect. If we don't want to be undercut in the marketplace we have to find ways to stand apart; a product harvested from the wild is one way to stand apart.

Value-added Possibilities - Value-added is one of the keys to building a long-term, viable industry. Value-added is any way that involves increasing the price for that product. The more 'traditional' view of what value-added means is a raw material – like berries – being turned into a different product – like jam – through processing. A much broader view of 'value-added' may not involve changing the physical aspects of your product, but, for example, changing your marketing approach to gain a better price for your product. It might also involve 'transformation' of your product through freezing, drying, dyeing, making wreaths, wild berry fruit leather, wild mushroom seasoning, etc.

The most value you can add to a product is by marketing the experience surrounding the plant and its use. Instead of selling rustic willow furniture, sell the educational experience of making willow furniture (and sell the materials along with it). When done properly, the opportunities for eco/cultural tourism in First Nations

communities are enormous. So when you're thinking about adding value to NTFPs, take a broad view. But also take a critical view; for example, it doesn't always make sense to try to add value through costly investments in processing.

NTFPs in Community Development - Success in this industry is enhanced by support from agencies at various levels of government. As a start, agencies can support the development of the industry by speaking about NTFPs as a legitimate opportunity. Talking about the economic value of the industry is an important way to get various people who can influence policy interested, and some funding secured for research and extension in this area.

Spread the word on programs that can provide capital through loans or grants – such as micro-credit programs. The industry doesn't have a tremendous amount of credibility with funding agencies and bankers which can create problems for new entrepreneurs trying to access capital.

If the development of an industry association is deemed important and appropriate by industry members, provide some resources and support to get one off the ground. It's often difficult to sustain these associations on volunteer effort alone.

Create the opportunity for some training or consulting to be done. Follow-up with medium to long-term support to maximize the number of entrepreneurs that can be successful. Make use of existing programs if they seem appropriate, but INSIST that a local educator or [cooperative] extension person be involved in adapting or re-developing the course for use in your region. You need to leave a legacy of trainers, and [cooperative] extension people who can take that course and continue to develop it for the benefit of local people.

NTFPs do provide a legitimate economic development opportunity that should be considered with all the other opportunities out there. NTFPs are not going to solve all the problems of remote, economically distressed communities. If we have unrealistic expectations, we set ourselves up to be disappointed. We need to find a balance between the lack of knowledge of the industry and of the real opportunities it provides, and those unrealistic expectations that in most cases the industry will fail to meet.

In conclusion, I'd like to remind people to start small and take the time to learn the business and as much as you can about the ecology of the forests you'll be working in. Nobody (I've found) creates a business in this industry overnight; don't try to do too much, too fast.

Secrets to Success—Small Business Startup Panel

Stan Steadman, SEGO Enterprises

Biography - Stan has been involved in community planning and development since 1972 as a planning director, regional economic development director, professor, and business owner. He established SEGO Consultants to train and assist entrepreneurs. In 1999 he co-sponsored the Kenai Peninsula Small Agriculture & Non-Traditional Natural Resources Project, including "Harvesting Our Own" workshops, to identify product development opportunities. Stan and several of his students then started a retail store, AK Krafters, featuring NTFP such as furniture and herbal products.

I am grateful to have been raised in a family that was creative. My parents are musicians and my brothers are artists. My talent is to recognize creative talent. As an economic development and business planner, I am glad to be part of a profession where creativity is demanded. If you are not creative then you're not going to get very far in that profession. I have the good fortune to be surrounded by creative people.

What I like to do is see what can be done by focusing on human and natural resources in the community. The process begins with a good idea. A lot of people are still at the point where they are searching for a good idea or taking an idea and expanding it to make it a good idea to bring to the marketplace. That was the idea behind the Kenai Peninsula Small Agriculture and Non-traditional Natural Resources Project. At a series of meetings, people came together to try and work with the human resources that they have along with the natural resources available to stimulate some new opportunities in the community. I believe that we are just at the tip of the iceberg for what we are doing compared with what we can be doing. At these meetings, the group came up with a lot of ideas that some people have had the opportunity to respond to and work with.

I teach classes in entrepreneurship. Many of his students are people that may have been laid off from work, people going through a divorce, and elderly people -all looking for an economic opportunity. They're looking for low tech, small business opportunities. I help them develop their ideas so they know where to go with them. I then help them test their ideas with friends and neighbors.

The next element is the feasibility analysis, which is a key part of the development process. To go further down the process with a bad idea isn't going to help anyone. If the idea is not feasible then it needs to be reworked until it is feasible. One caution is that even if the idea is good, the environment must be right for the idea to work. I use a formal feasibility process that can be adapted to meet the needs of people involved with these projects. FastTrac Entrepreneurial Training Program is a process that trains people in feasibility. I make sure that the people I am working with have a viable project. After an analysis done, people can take their idea to the Small Business Development Center and other people in community for support with the continuation of the effort.

Another key to business success can be participation in a Business Opportunity Network. A Business Opportunity Network allows individuals with good ideas to work with others as part of a network in order to accomplish things which they would not have done on their own. One example is the oyster growers that organized into the Kachemak Bay Shellfish Growers Cooperative and were able to work together to create

an industry. There was not enough local market for the oysters and no one oyster farm was large enough to go outside the local market. The cooperative did a feasibility study and developed a business plan for the industry. The cooperative was able to show the community that the industry was viable and was able to receive several grants. From this money came a nursery system and a marketing system which benefits the whole industry.

Marlene Cameron, President, Cameron Birch Syrup & Confections, Inc.

Biography - Marlene's successful business makes pure Alaskan birch syrup and more than a dozen other candies, confections, and condiments made with birch syrup. An enthusiastic supporter of the rapidly growing birch syrup industry, Marlene was an organizer of the Alaska Birch Syrup Makers' Association. She became involved in the Nontimber Forest Products industry in 1999, after speaking at an NTFP conference in Canada. Since then, Marlene has spoken at several NTFP conferences and has consulted with individuals, schools and indigenous groups in Alaska and Canada considering starting birch syrup operations.

Secrets to Success

There are no generic "secrets to success" or formulas for success that will work for everyone. There are, however, steps to success. By climbing the steps to each new level of your business rather than taking the elevator, you won't bypass some vital steps along the way and you won't get sidetracked. Although you might do what I often did—trip while trying to run up those steps too quickly. I have managed to do just about everything that is humanly possible to do wrong in a business. At some point in our lives, we've all asked ourselves what our purpose in life is. Well, I finally decided what mine is: I was put on earth to serve as a warning to others!

In 1989, I tapped six birch trees and boiled down the sap in the back yard. I had heard of the old timers in Alaska who did this, so I thought I'd give it a try. What we ended up with looked—and tasted—like Alaskan crude oil! Even so, I thought we might have a new product here. Up to this point, I had been teaching English at the university, and my business acumen was limited to a simple mantra: if tourists will buy moose nugget earrings, they'll buy anything. In 1990, I sold my birch syrup to a gift shop in Anchorage—my first venture into commercial business.

With remarkable optimism, I took my idea and my birch syrup to the Small Business Development Center. With a smile, the staff listened to my idea, tasted the birch syrup, and suggested I go home. However, the staff stuck with me. They tried to drill into me the importance of a business plan and financial spreadsheets. They might as well have been talking to the wall. It just didn't sink in. To this day, I still don't have a business plan, and I'll be the first to say that's the first step to success that should *never* be skipped. The staff was running out of ideas for me, so in desperation they mentioned the Alaska Science and Technology Foundation (ASTF) as a grant source.

I wrote a grant proposal to the ASTF for the research and development of a birch syrup industry in Alaska. Much to my surprise, I received the grant for a three-year project to determine whether or not birch syrup could become a viable industry. As it

turned out, there were two other birch syrup operations in different parts of the state that started at the same time I did. The ASTF grant moved the formation of the industry forward and we have shown that, yes, birch syrup is not only a viable industry but also one of Alaska's fastest-growing new industries. With the establishment of a strong Alaska Birch Syrupmakers' Association and the increasing number of syrupmakers, the birch syrup industry is making a significant place for itself in Alaska's small business community.

In the meantime, I wasn't through making mistakes—most of them costly. Partly because I had no business plan to follow and partly because I tend to jump into things without looking first, I tried a lot of things that ended up not working out. For several years I had a very nice, full color catalog. Although it was well received, it drained the business financially year after year. It's hard to let go of an idea you're in love with. Along the way I've had products and packaging that have fallen flat on their faces—usually leaving a hole in the bank account at the same time. Seems that in order to find out what works, I have to first find out what doesn't work. That's how it's supposed to be done. So, before you do anything with your business, check with me first. I've already done it wrong.

Well, back to the subject—Secrets to Success. So what is success anyway? Each of us defines success differently. Is it fame? The post office delivers mail to me whether or not the address is correct. Is it fortune? My rent checks don't bounce. No, success for me is defined by the relationships I have developed along the way. My own sense of success comes from meeting and knowing all the terrific people in the past ten years that I never would have if I had stayed in the classroom. May Jefford, the gift shop owner who first bought my syrup. Jim Vik, who works for the Food and Drug Administration and who has been wonderfully supportive with suggestions and encouragement. Diane Simkins, who makes soaps and lip balms—and now some with birch oil. Dulce and Jeff, the other two "original" birch syrup producers. Crazy Jay, who makes birch wine. John Zasada, who introduced me to Nontimber Forest Products. That's how I define success in my business.

Dick Baldwin, Seeds of Alaska

Biography - Dick Arrived in Alaska in 1941 and founded Seeds of Alaska in 1948. A family business, Seeds of Alaska grows plants for seed production, as well as collects wild seeds. Markets are primarily retail with some bulk orders to the Alaska Department of Transportation. Specializing in plants native to Alaska, they sell seed in Alaska, Canada, Iceland, and northern states of the Lower 48. Seeds of Alaska also provides contract work for reestablishing plant communities through hydro seeding. They are now developing stocks in wetland plants.

If any plant materials are needed for soil reclamation anywhere in Alaska, they can be found nearby. Local plants are better than plants from anywhere else in the world, because they're acclimated to the climate. Things brought in from elsewhere won't work as well as plants collected locally since plants that grow here are not the same as the plants that grow elsewhere. Fireweed which grows in California is different from the fireweed that grows in Alaska. Plants that grow in Dutch Harbor, which is very wet, will not grow as well in Kenai which is much drier.

Another reason for not bringing in outside plant material is the possibility of bringing in invasive weeds. If you bring in an exotic plant, it may alter natural plants and the 'spirit of the forest.' Plants here having been growing together for many years and are compatible. Bringing in exotics will disrupt their community.

Seeds of Alaska was started when there wasn't any market for local seeds. Currently we don't grow enough locally and have to bring in plants. Now, if we don't sell more, we'll start losing market shares real fast.

Rod Hilts, Manager, Chesloknu Foods

Biography - Rod has an MA in elementary education and has had a diverse career in Alaska as a teacher, restaurant owner, and commercial fisherman. Rod has worked for nine years in his current position as General Manager for Chesloknu Foods. Chesloknu Foods was created by Seldovia Village Tribe in the Fall of 1993 to provide local jobs using a local, traditional resource. Chesloknu Foods produces wild berry jams, jellies, and syrups under the brand name Alaska Tribal Cache.

Seldovia Village Tribe
Creating a Rural Value-added Company Using a Traditional Resource

Talking about products is actually talking about economic development. In Alaska, rural manufacturing is rather rare, especially beyond the end of the road, which is where the Seldovia Village Tribe finds itself. Seldovia Village Tribe created a small jam/jelly/syrup producing company, Chesloknu Foods, in 1993. The goal was to provide local jobs using their traditional renewable resources. The motive was not only for profit but rather to create jobs in an economically depressed area.

The area around Seldovia has an interesting history. Between 1875 and 1880, the spruce bark beetle killed off all the trees in the area, so the oldest trees there are now around 120 years old. In the 1970's, an eight hundred-acre area was clear-cut. In 1980 St. Augustine erupted and deposited a half-inch of fertilizer across the land. The clear-cut area was phenomenal for berry picking from 1985 through 1993, with several varieties of wild berries. It had become the primary area for heavy subsistence harvest not only for Seldovia's residents, but also for visitors from as far away as Anchorage (200 miles). In addition, at least two commercial jam/jelly makers annually sent commercial pickers, via the state ferry, to pick for their production needs. Since 1994 local residents have done the commercial picking and then only for Chesloknu Foods.

The guiding principle for the tribe has been to preserve the subsistence/personal use picking, while also securing the needed berries for Chesloknu Foods. Today the company has grown to be a major provider of wholesale jams, jellies, and syrups to gift stores throughout Alaska.

About 1997 the company noticed that the berry patches were not producing as well as in the past. Careful observations and wide reaching research indicated that the crowding of the berry bushes as the forest regenerated itself was causing the decline in natural production. Chesloknu Foods devised a plan and secured grant funding to enhance the wild berry growth in the harvest area. When looking at sustainability, changeability and how the forest is going to change over the long-term must be considered.

The Natural Wild Berry Enhancement Project showed that selective clearing of competing growth using several specific methods could insure the continued dual use of the area. The three-year effort began during the summer of 2001 on 10-12 acres. Initial findings suggest that the removal of competing growth does result in better berry production.

Appendix I

Current Contact Information for Conference Speakers, Panelists, and Organizers

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Appendix II – Conference Agenda

November 8, 2001

Morning Moderator: Mitch Michaud, USDA NRCS
Afternoon Moderator: Bob Gorman, UAF Extension Service

Opening	**Marlene Cameron,** Owner, Cameron Birch Syrup & Confections, Inc.
Welcome	**Lee Stephan**, CEO, Eklutna Village Corporation

KEYNOTE SPEAKER
Gina Mohammed, P & M Technologies **8:30 a.m.**

TOPIC: TRADITIONAL USES
Lead Speaker: Dolly Garza **9:15 a.m.**
Traditional Uses Panel: **10:15 a.m.**
Alaska Natives from different parts of Alaska share their traditional use perspectives.

TOPIC: BIOLOGICAL SUSTAINABILITY
Lead Speaker: Nan Vance **11:15 a.m.**

Biological Sustainability Panel: **1:00 p.m.**
Biologists share their expertise on sustainability of NTFP resources.

TOPIC: ECONOMIC OPPORTUNITIES

Lead Speaker: Jim Freed **2:00 p.m.**
Economic Opportunities Panel: **3:00 p.m.**
Specialists share knowledge and support for economic opportunities in Alaska.

TOPIC: LANDHOLDERS' POLICIES AND ACCESS TO NTFP RESOURCES

Landholders' Panel: **4:00 p.m.**
A panel of public and private landholders share information about policy and access to NTFP resources on the lands that they manage.

Trade Fair/Poster Session Open to the Public: 5:00 - 9:00 p.m.

Ice-cream Social: 7:00 – 9:00 p.m.

November 9, 2001

Morning Moderator: Linda Christian, USDA Forest Service

Afternoon Moderator: Mitch Michaud, USDA, NRCS

TOPIC: SOCIAL, ETHICAL AND SPIRITUAL ASPECTS OF NTFP

Lead Speaker: Michelle Davis **8:00 a.m.**
Social, Ethical, Spiritual Aspects Panel: **8:30 a.m.**
Native and non-native panelists share perspectives on non-commodity values of NTFP.

TOPIC: SECRETS TO SUCCESS - SMALL BUSINESS STARTUP

Lead Speaker: Tim Brigham **10:00 a.m.**
Secrets to Success Panel: **10:30 a.m.**
NTFP business owners share their success stories.

BREAKOUT WORKGROUPS **1:00 p.m.**
Lead Facilitator: Ruth St Amour
Topics:
- Traditional Uses and Values
- Biological Sustainability
- Ethical, Social, and Spiritual Aspects
- Land Management
- Business Opportunities

CLOSING STATEMENTS **4:20 p.m.**

Trade Fair and Poster Session Open to the Public: 5:00-9:00 p.m.

NTFP Banquet: Traditional Foods and Storytelling: 7:00 p.m.

Enjoy an evening of traditional foods, Alaska Native storytelling, and good company on this last evening of the conference. This event will be held at the Spenard Community Recreation Center. Transportation will be provided from the Millennium Hotel. The address for those who will drive independently is:

Spenard Community Recreation
2020 West 48th Avenue
Anchorage, AK 99517-3171

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Appendix IV – NTFP Workgroup Activities

How to be involved in the Alaska NTFP workgroup:

Join the list serve as a way to find out about meeting dates and times. Participation on the workgroup is welcomed. Most meetings are via teleconference. Funding may be available for participation in workgroup activities.

To join the list serve, follow these steps:

- If you are already a member of a Yahoo group:
  1. Send an e-mail message to akntfp-subscribe@yahoogroups.com and put the word **subscribe** in the subject.
  2. Your e-mail address will be automatically added to the list serve.
- If you are not a member of a Yahoo group:
  1. Go to http://groups.yahoo.com.
  2. Enter your information to sign up for a Yahoo ID,
  3. Follow the instructions on how to join a group.
  4. The group for NTFP in Alaska is called **akntfp**.

If you have any questions, please contact the Alaska NTFP Workgroup Chair:

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Alaska Soil and Water Conservation District
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Goals for 2002-2003

1. Publish and distribute conference proceedings from *Hidden Forest Values: an NTFP Conference and Tour*.

2. Promote the awareness of important NTFP issues through presentations and displays at important Alaskan venues.

3. Develop the workgroup into a functioning entity.

4. Increase the dialogue between federal and state landholders and NTFP users during policy development.

5. Plan and execute another statewide NTFP conference in early 2004.

Workgroup History

Several weeks after the conference, the original NTFP conference planning committee met. Based on results from the conference break out session, the workgroup established a list of short-term objectives and associated tasks. The group established committees to complete identified tasks and a workgroup chair position to coordinate directly with committee chairs and to promote cohesion between committees. To date the active committees include the following: Landholders, Traditional Use Issues, and Workgroup Coordination. An ad hoc proceedings committee will oversee the production of the conference proceedings and disband when the proceedings have been distributed. Other committee will be formed as workgroup activities expand.

Vision

Economic opportunities from a viable industry
Protection of the resource by effective management and applied research
Respect for traditional and spiritual values through education and awareness

Mission

The Alaska Nontimber Forest Products Workgroup will help balance the use and protection of nontimber forest products in Alaska by:

- Providing a forum for discussions of policies, ethics and programs concerning nontimber forest products.
- Supporting the development of best management practices for products harvested in Alaska.
- Identifying research needs regarding economic, social and biological aspects of NTFPs in Alaska.

Values

We believe that nontimber forest products provide important economic, cultural and ecological resources for Alaskans. We believe that a variety of uses for nontimber forest products can coexist. We believe that Alaskans have a right to work with local, state and federal governments that hold our lands in commons and that government landholders have an obligation to work with Alaskans regarding the management of nontimber forest products. We believe that the strength of the Workgroup lies in our diversity of experiences, viewpoints, knowledge and needs; and that our success will stem from our commonality of purpose—sustainable nontimber forest products for Alaskans.

Operating Principles

Workgroup meetings will be conducted with consideration for the value of people's time. No meeting will be held without a clear purpose. Participation on workgroup committees is open to all Alaskans who have a strong interest in Alaska nontimber forest products and will dedicate time and effort to committee work. Native Alaskans, who have used

forest products since time immemorial, and Alaskan entrepreneurs, who have discovered new applications for specialty products, have knowledge unique to their experiences. This knowledge will be respected and valued.

Appendix V – Presentations and Posters

THE HIDDEN FACE OF THE FOREST: NON-TIMBER FOREST PRODUCTS AND VALUES[1].

Gina H. Mohammed, Ph.D.
Research Director, P&M Technologies

INTRODUCTION

Every forest has two faces. The one is perceived by our brain, the other beheld by our soul. It is the second that yields the most enduring treasures, and the most delightful surprises. This is the non-timber arena. In my opinion, it is the forest at its very finest, from which it heals, feeds, shelters and sustains us from the depths of its diversity.

We must approach this face with respect. With respect, there flows a full range of offerings. And yes, there is a place for enterprise, just as there is a place for all of the rest.

Many of us in North America have become enamored with non-timber prospects in the last decade or so. Not that non-timber forest products (NTFPs) are really a new phenomenon. But several forces have shaped our growing interest in this subject. Forces such as:

- Commitment to sustainable development and certification;
- Concern about biodiversity in our forests;
- Greater attention to the needs and importance of native peoples;
- More emphasis on community forestry;
- Determination to break free of the uncertainties of the timber industry.

In this presentation, I will review some of what I have found about the NTFP sector in Canada, focusing on botanical NTFPs. We will also look at issues facing the north, including its native peoples, and some of the efforts underway in Canada that begin to address these. As Alaska moves ahead in developing its own NTFP sector, our discussion of potential pitfalls and recommendations will, hopefully, be of use.

NTFPs IN CANADA

[1] Presentation for Hidden Forest Values, Alaskan Non-Timber Forest Products (NTFP) Conference, 8-11 November 2001, Anchorage, Alaska.

Non-timber forest products are botanical forest products other than timber. There are about 50 kinds of NTFPs, and these may be sorted into broad categories of Foods, Materials & Manufacturing Products, Landscaping Products, Health Products, Aesthetics Products, and Environmental Products (Mohammed 1999). Hundreds of individual items are housed within these broad classifications. These products may be used commercially or non-commercially, and include cultivated products.

In Canada, the non-timber sector is a multi-dimensional one, incorporating products (primary and value-added), values, cooperatives, R&D, ecotourism, and cultivation.

Maple Products

Our biggest NTFP is maple syrup, taken mainly from the sugar maple tree. Canada accounts for 86% of the world production of maple syrup while the United States accounts for the remainder. There are about 9,500 farms commercially producing maple syrup in Canada. The province of Quebec handles about 93.3% of Canadian production. In 2000, farm cash receipts were estimated at $151.4 million*. It is estimated that maple production could double in certain regions of the country if more woodlands were to be transferred to maple production. Many producers have developed extensive markets for maple products such as maple syrup, maple sugar, maple taffy, maple spread, and moulded soft maple sugar (soft sugar candy). Maple products are considered as high value products and are subject to stiff competition from other sweeteners. The industry is exploring the possibility of promoting the nutritional value and "pure and natural" virtues of the maple products (Agriculture Canada, http://www.agr.ca).

Christmas Trees

Christmas trees in 1999 produced farm cash receipts of $71 million. About one-half of production is exported, 98% of which goes to the United States. Our popular varieties are balsam fir, fraser fir, scotch pine, and white spruce.

Arts & Crafts, Florals and Greenery

Flowers, foliage, branches, cones, and wood from the forest comprise a vast industry of creative products and supplies. In general, value-added craft products such as wreaths, baskets, and potpourris are the most profitable. Giftware retail sales is a large market, for example, in the U.S., it was valued at US $21 billion in 1998, and is projected to reach US $28 billion by 2003 (Kalorama Information 1998).

Even plants considered nuisance weeds can become valuable decorative items. For example, in the Pacific Northwest, the salal plant – historically a notorious weed on forest sites – now enjoys a new popularity as a result of its decorative, long-lived foliage (de Geus 1995). Unfortunately, along with the growing demand, some serious issues have arisen regarding competition for harvest of these products, sometimes resulting in violent confrontations among pickers on sites in the Pacific Northwest (Daily Southtown 1998).

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* Canadian Dollars, unless otherwise indicated.

Native arts and crafts from northern Canada are very popular. Carvings, traditional needlework, quill crafts, and basketry are a few examples. These are all especially popular among certain buyers, notably in the United States and Germany. At present, demand exceeds supply, but the industry is challenged by the lack of skilled native artisans, especially among the youth.

Wild Blueberries

In 1999/2000, Canada exported more than 30 tonnes of wild blueberries, worth $100 million. This represented an increase of 47 and 55% over the previous year. Appreciation of the health benefits of wild blueberries has helped to increase the demand (Mohammed 2001). Canadian wild blueberry production is concentrated in eastern Canada. More value-added products are appearing on the market, e.g., from companies such as Natural Newfoundland Nutraceuticals, which produces power juices, blueberry tablets, and other value-added products; Wabauskang Wildfruits Company in Ontario which markets wild blueberry products from Ontario's north woods; and the Kagiwiosa Manomin in Ontario, an Ojibway-owned and operated cooperative that markets wild berry bars and preserves.

An interesting novelty product is offered by Roman Catholic monks of the Saguenay-Lac-St-Jean region of Quebec. They produce chocolate-dipped blueberry clusters. They sell 25,000 boxes each year, retailing for about $150,000. Although they cannot meet the growing demand, they will not increase production as the current level of production is sufficient to meet the financial needs of their monastery (Sault Star 2001).

Honey

Over 300 unique kinds of honey are produced in North America, including that from forest species such as basswood, alder, poplar, maple, and wild blueberries. Canadian honey is a high quality product, sold at premium prices. However, Canada produces only about 7% of the world's honey supply, after the top producers of China (40%), United States, Argentina, Germany, and Mexico. Honey has value, not only as a sweetener, but as a health product in that it contains trace enzymes, minerals, vitamins, and amino acids (http://honeycouncil.ca).

Wild Mushrooms

There are many edible wild mushrooms in Canada, and at least 56 species are considered tasty. These include morels, chanterelles, and boletes. But the pine mushroom (or matsutake, *Tricoloma* spp.) is probably the most valuable in North America, though it is lower quality than the Asian form (Tedder et al. 2000). In B.C., pine mushrooms have an annual value of $45-55 million (Wills and Lipsey 1999).

One of our local companies on Ontario is Tom's Wild Mushrooms, a family-owned business, which is trying to increase Canadian tastes for wild mushrooms (http://www.magma.ca/~tstein/). Canada is unlike other countries, e.g., in Europe, Japan, and the U.S., where the demand for wild mushrooms is worth about US $1 billion annually.

In addition to wild collections, mushroom cultivation is also underway for certain species, such as the shiitake. These can be cultivated into hardwood logs. The fungal mycelium works its way through the whole log and eventually mushrooms sprout. The logs can be held outside or, to prolong the growing season, inside in controlled environments. This is one good route that addresses concerns about site degradation and depletion of wild stocks.

An interesting aspect is the medicinal actions of many mushrooms (Wills and Lipsey 1999). Medicinal aspects include: certain polysaccharides that stimulate the immune system; terpenes and steroids that reduce blood pressure and blood lipids, as well as serving as antibiotics and anti-viral agents; stimulation of production of white blood cells, antibodies and interferon; inhibition of HIV infection; and improved survival rates from Hodgkin's disease, and pancreatic cancer. These aspects, while extensively researched in Asian countries and the Russian Far East, are relatively unknown in North America. Also, North American First Nations do not have a significant history of usage. The annual world market for nutraceutical and medicinal mushrooms has been estimated at US $1.3 billion.

Health Products

- ***Weeds***

Weeds can be particularly good sources of new health products. For example, fireweed (*Epilobium angustifolium*) is a notorious weed that establishes on cleared sites. But this weed which we have typically considered to be a nuisance is a valuable source of medicinals. Some of its extracts have even been patented. There is a company called Fytokem in Saskatchewan that develops commercial health products from fireweed (Hetherington and Steck 1997). Many other weeds have medicinal benefits, such as the thistle – in this case, for the liver. In Ontario, I've determined that about 60 of our forest weed species have scientifically-validated medicinal applications, and many are patented.

Other screening shows natural inhibition of tuberculosis by certain plant extracts e.g., of alder *Alnus rubra* from First Nations ethnobotanical evidence. (Note: TB incidence in Europe and N.America is rising.) (Wills and Lipsey 1999)

- **Ginseng**

North American ginseng had an export value of $61 million in 1998. The split for provincial production is roughly 2/3 from Ontario and 1/3 from British Columbia. Canada is the largest producer of North American ginseng, producing about 60% of world production. (The U.S. produces 30%.) The various types of ginseng grown are:

  - Wild ginseng – grown naturally with no influence from man;
  - Wild simulated ginseng – seeds scattered in areas suitable for ginseng growth;
  - Woods-grown ginseng – trees used for shade, and beds may be formed;

- Cultivated ginseng – all plant needs are supplied by man, and comprises the majority of North American production;
- Organic ginseng – residue free, no chemicals.

North American ginseng is an endangered species, and thus subject to regulations of the Convention on International Trade in Endangered Species (C.I.T.E.S.). International trade is not limited, but trade must be documented and permits to export obtained (Ontario Ministry of Agriculture, Food and Rural Affairs, Leuty 2000).

Wildcrafting of ginseng has been so active over the past 100 years that finding wild ginseng from any southern Ontario hardwood forest is now almost impossible (Leuty 2000).

- ***Wood Waste***

Wood waste is proving to be a novel source of health products. Dietary phytosterols are now available from pine and fir wood pulp waste, which are then incorporated into foods such as margarine or health supplements. A B.C. company, Forbes MediTech, has licensed technologies for extraction of pine phytosterols, that have been shown to reduce human blood cholesterol levels (Wills and Lipsey 1999).

- ***Other***

Taxol, from the Pacific yew, is an established drug for the treatment of certain cancers, and is worth US $1.6 billion annually in sales. Now, Angiotech Pharmaceuticals Inc. is reformulating the anti-tumor drug paclitaxel for new uses e.g., rheumatoid arthritis, multiple sclerosis, and neovascular diseases of the eye. Anti-inflammatory properties of paclitaxel had not been previously recognized (Wills and Lipsey 1999). Phytogen Life Sciences currently manufactures high quality paclitaxel, a derivative of the bark of the Pacific yew.

Ecotourism

Ecotourism is a growing element of the non-timber sector. In British Columbia, for example, ecotourism contributed more than $165 million in direct revenues to the economy in 1997. Ecotourism ventures consist of activities such as guided nature walks, mushroom festivals, educational tours, craft workshops, and botanical gardens.

In Maritime Canada, the MicMacs conduct guided walks and other services related to understanding traditional uses of plants by the MicMac. In Saskatchewan, a member of the Cowessess First Nation established an ecotourism business providing cultural learning experiences and educational opportunities (www.cableregina.com/users/lungar). There are also native botanical gardens in Canada that serve as a tourist attractions, and are also involved in research and

education. An example is the Mi'gMag Aboriginal Heritage Garden in New Brunswick (Eel River Bar First Nation) (http://www.aboriginalgardens.com).

In Wills and Lipsey's (1999) study for British Columbia, they suggested that properly developed ecotourism destinations and activities hold the greatest promise of all the non-timber forest products and services, to bring significant revenues into local First Nations communities. Information-intensive activities are the most rapidly growing part of ecotourism worldwide and are not well-developed in B.C. "Ecotravellers" are interested in nature, wildlife, traditional cultures, archaeology and conservation. A growing trend is that of ecotourists paying for the privilege of offering their labour in maintaining or enhancing natural features, e.g., in tree planting (Wills and Lipsey 1999).

Cooperatives

NTFPs are sometimes marketed through cooperatives. Examples in Canada are the Kagiwiosa Manomin in Ontario, an Ojibway-owned and operated cooperative that markets wild berry bars, preserves, and traditionally harvested organic wild rice (http://www.canadianwildrice.com); and the Mitigaawaaki Forestry Marketing Co-Op in Ontario, that helps to identify markets for less desirable species such as poplar and white birch (www.onlink.net/~coopwood). Mitigaawaaki also is involved with maple syrup production, wild mushroom training, and birch bark harvesting and crafting. It is also working on an idea for a youth camp for recreational, cultural and NTFP business and harvesting opportunities in the context of a summer camp experience. In 2001, Mitigaawaaki has received financial support from FedNor to develop a strategic plan for both timber and non-timber products and development of a woodyard and multi-use forestry complex to serve as an incubator for NTFP businesses (Gow-Meawasige 2001).

The benefits of cooperatives have been reviewed by Gow-Meawasige (2001). They include:

- Links government with communities for financial and information purposes;
- Financial advantage and strength in numbers;
- One window approach to doing business;
- Provides marketing expertise to smaller harvesters;
- More aligned to First Nations traditional values;
- Gives more time to business owners to concentrate on product development;
- Certification facilitated and cheaper as a group;
- Equipment and resource sharing;
- Contribute to policy development at community level.

Cooperatives are becoming involved in research as well. For example, the Upper Lakes Environmental Research Network (ULERN) in Ontario is an amalgamation of government and private sector scientists that work on a variety of issues. ULERN is also spearheading the establishment of the Kogaediwin Botanical Garden, which will house native plants and serve as a tourist attraction and a venue for research, commercial product development, and education (http://www.ulern.on.ca).

POTENTIAL PITFALLS

Separation of non-timber products and values

Non-timber values are often considered separately from NTFPs, and that is a mistake. We tend to focus on NTFPs yet be constrained by non-timber values. Whether certain NTFPs will be acceptable to the users of a particular forest will depend on what is important to those people about that forest. Whether it's native groups or the community, our concept of what we should do with a resource is shaped by the specific values we place on that resource for our sustenance, enjoyment, health, and cultural priorities.

This idea can be illustrated simply using a pitcher of water. The water – the product – needs the pitcher to provide structure and context for its use. Water spilled freely may be easily wasted and rendered useless – it may even do harm depending on where it is spilled – but guided and poured from the vessel it can fill many different cups – many diverse outlets. So, NTFPs without the context of values can end up as merely spilled and wasted effort. With proper context, it can serve diverse purposes.

That value system may say, in some instance, that a community is not willing to commodify the forest, or entertain the possibility of mass pharmaceutical production from wild sources, or disturb native sacred sites. The unique personality of the affected community will set that context.

Northern Issues

Northern issues are multi-dimensional and include:

- Geographical isolation;
- Prevalence of undervalued boreal species;
- Struggling economies in many regions;
- Exodus of youth;
- Over-reliance on primary products from resource-based business;
- Adverse weather;
- Concentration of native groups and associated issues with treaty rights, land tenure, and land management. More than 80% of Canada's Aboriginal population lie within Canada's productive forest zones.

Native Concerns

The special concerns of native groups are complex and varied. They include issues involving treaty rights, sacred grounds/plants, intellectual property, sustenance versus commercial development, profit distribution, economic opportunities, sustainability, and knowledgeable and wise use of plants.

A special report was done looking at economic and social potential of NTFPs in the Queen Charlotte Islands/Haida Gwaii (Tedder et al. 2000). The QCI is an archipelago made up of 150 islands that cover an area of about 1 million ha, and a population of about 5,808 people. It is located off the mid-coast of British Columbia below the Alaska

Panhandle, and is the traditional home of the Haida First Nations. Traditional industries of the area are logging, tourism, and fishing.

Some of the main concerns of the Haida regarding development of NTFPs and related businesses are:

- Attraction of NTFP harvesters to the area before resource management tools are in place;
- Resolution of land claims before development occurs;
- Recognition of Haida rights before allocation of tenure rights to NTFPs;
- Sustainability studies and approval of personnel by Haida;
- Full participation of the Haida in commercial enterprise;
- Protection of traditional, subsistence, sacred, and traditional harvest sites;
- Understanding the concept of not using NTFPs for commercial purposes.

(A study by Turner and Cocksedge (2001) found that over 500 plant species in northwestern North America are important to aboriginals, and most of these are forest species. Of these, 135 are used as traditional foods.)

Community-level issues of the QCI included:

- Lack of baseline ecological, economic and social information needed to make informed decisions on management of the harvest;
- "Problem of the commons" – a resource available to everyone and under high demand can be subject to abuse, neglect, misuse and underinvestment;
- Islanders' lack of enthusiasm for becoming a world class tourist destination.

How is Canada Handling Northern & Native Issues

In trying to help address the issues of the North, Canadian actions have focused on improving opportunities for natives, improving economic prospects for entrepreneurs in general, mainly through funding, incentive programs, and business marketing assistance. Actual management of forests is a very hot issue, and quite a few legal cases are underway for recognition of treaty rights and consequent management powers in northern forests.

Programs / Associations / Initiatives

- **First Nation Forestry Program** (http://www.nrcan.gc.ca)
  This is a federal program that is designed to support innovative First Nations forestry initiatives. It helps natives to obtain job experience, develop business skills, participate in forest decision-making, increase education on forest management, and manage native-controlled lands. Since 1996, it has supported about 1,000 projects with $25 million in funding.

- **Aboriginal Business Canada** (http://strategis.ic.gc.ca)

There are more than 20,000 Aboriginal businesses in Canada, including many forest-based enterprises such as sawmills, logging companies, ecotourism activities, and non-timber product ventures. Sixty percent of Aboriginals are under 30 years of age. This agency helps to set strategic directions for growth of small businesses. It funds natives directly for up to 60% of the cost of eligible capital and marketing costs, to a maximum of $75,000. Targets for funding are projects emphasizing Aboriginal youth, tourism, trade and market expansion, innovation, and communications.

- **National Aboriginal Forestry Association**
  (http://www.aybc.org/resource/content/nafa.htm)

This is a national organization created by Aboriginals. Its primary focus is to promote increased participation of Aboriginal people in the forest sector by working to remove attitudinal, policy, and legislative barriers that may restrict native involvement in forest management and related commercial opportunities. NAFA maintains the profile of native concerns through a variety of methods, from lobbying of government to sponsoring of conferences. A NAFA Conference is scheduled for Nov 4-7, 2001: Aboriginal Forestry: Facing the Issues, Nanaimo, British Columbia.

- **Canadian Model Forest Network**
  (http://www.modelforest.net)
  This is a network of at least 10 forests across Canada, organized and administered by the Canadian Forest Service. Each model forest is intended to serve as a "demonstration of partners representing a diversity of forest values, working together to achieve sustainable forest management". A model forest serves as a large laboratory that investigates new technologies, including research and development. NTFPs are among the types of products of interest.

  Under the auspices of the Model Forest Network, the federal government has established an *Enhanced Aboriginal Involvement Strategic Initiative*. This Initiative seeks to enhance First Nation, non-status Indian & Metis communities' participation in expanding their knowledge and tools of forest management. Aboriginals are also responsible for managing one of the model forests.

- **Forest Companies / Programs & Joint ventures**
  Canadian forest companies are recognizing the need to cooperate with First Nations on forest management, and are formalizing programs and joint ventures to achieve that objective. A couple of examples are Tembec's *Forever Green*^{R} Environmental Management Program, and a joint venture between MacMillan Bloedel (now Weyerhaeuser Co.) and the Nuu-chah-nulth First Nations with the Clayoquot Sound Interim Measures Extension Agreement (IMEA). The IMEA is an agreement between the First Nations and the British Columbia provincial government to provide for joint management until completion of treaty negotiations.

  The Tembec program is part of the company's ISO 14001-certification initiative. It is focused on identification and protection of sites of special significance to First

Nations, incorporation of traditional knowledge and values into forest planning, and improving commercial relationships, employment, training, and awareness.

In addition to formal agreements, forest companies are becoming more amenable to coordinating their activities with both Aboriginal and other community members who are interested in extracting NTFPs. Dialogue between the companies and communities, including First Nations, is now underway in Ontario and other provinces.

- **Federal programs for business entrepreneurs and institutions**
  There are many other programs that offer funding and tax incentives to Canadian entrepreneurs for R & D, and new product marketing and business aid. These include:

  - **FedNor** (http://fednor.ic.gc.ca) – federally led program for northern Ontario, support for SMEs: Telecommunications, Infrastructure, Innovation, Trade, Community Partnerships; special initiatives for Youth, Women, Aboriginals, Francophones. General Innovation Related Projects are funded for 50% of eligible costs to max. contribution of $500,000;
  - **EcoAction 2000** (http://www.cciw.ca/ecoaction) – federal cost sharing program for projects to rehabilitate the environment;
  - **Industrial Research Assistance Program** (http://www.nrc.ca/irap/) – federal cost sharing of projects for small/medium companies to pursue novel product ideas;
  - **Natural Sciences and Engineering Research Council** (http://www.nserc.ca) – federal funding of joint projects between university and industry;
  - **Scientific Research and Experimental Development Tax Credit Program** (http://www.rc.gc.ca) – 35% tax credit for SR and ED costs for new product development;
  - **Technology Partnerships Canada** (http://tpc.ic.gc.ca) – cost-shared projects for near market technological development projects in environmental technologies, enabling technologies;
  - **Canada Foundation for Innovation** (http://www.innovation.ca) – cost-shared improvements to research infrastructure at institutions;
  - **CANMET Energy Technology** (http://www.nrcan.gc.ca/es/etb/cetc) – federal cost-sharing with industry to develop new energy technologies e.g., bioenergy.

Other Potential Pitfalls

- ***Low profitability***
  Wildcrafters rarely receive a fair price for the materials they collect. For example, in B.C., wildcrafters are paid one-half to one-quarter of wholesale value (Wills & Lipsey 1999).

  In a world-wide study, it was found that women may benefit the least from NTFP activities which tend to be associated with low technology, highly labour-intensive

work, isolation, and risk of displacement by men or machines (Newmann and Hirsch 2000). That study showed that it is often the most disadvantaged sections of society that suffer most – the poor and landless, indigenous peoples, and rural women. For native tribes selling NTFPs, middlemen tend to take too much of the profits, so tribes get only 10-40% of the sale price of items. Yet studies from all tropical regions show that it is often the poorest households in rural communities that are most directly dependent on NTFPs because it requires little capital investment, there is geographic proximity to forests, and there is an absence of alternative income sources. In Brazil, for example, agroforestry methods increase profitability per household to roughly 10 times that for direct NTFP extraction; on a per hectare basis, this jumps to 144 times (Newmann and Hirsch 2000).

- ***Loss of sustainability and genetic diversity***
  While NTFPs may be an alternative to forest removals and consequent loss in biodiversity, 66 percent of field studies show negative impacts from commercial harvesting of NTFPs because of resource depletion and loss in biodiversity (Neumann and Hirsch 2000). This commonly results from the use of unsustainable practices during harvesting. For example, in South Africa, a relatively recent surge in basket weaving has increased demand for fibres and dyes, placing pressure on the 30 species used for fibres and another 22 species used for the dyes. Whole tree removals are common.

  It has been shown that ecologically damaging extraction techniques are more likely to be used when the labour force is non-local, migratory, and unregulated (Neumann and Hirsch 2000). Also, species that reproduce rapidly and have more than one means of propagation are best able to withstand increased harvesting without significant ecological consequences.

- ***Health and safety***
  Primary concerns with health products include product safety, toxicity, and efficacy. The subject of natural health products has historically been a grey area in Canada as far as regulations are concerned. Herbal medicines have been classified either as foods, in which case one cannot make health claims, or drugs, which must go through costly testing. However, recent changes to the regulatory framework will probably serve to expedite the introduction of natural health products to the market, in response to increasing public demand for these items (Mohammed 1999).

  In comparison, in Germany, the Herbal Medicines & German Medicines Act of 1978 regulates health care products. Government conducts extensive research to investigate and support claims for plant medicines (Wills and Lipsey 1999). Also, Germany has a history of herbal usage long incorporated into conventional practice. About 80% of German doctors regularly prescribe herbs.

- ***Conflicts among multiple users***
  Conflicts among the various users of the forest have been common in Canada, where most forested lands are owned by the government, but managed through

long-term agreements with private or community companies or stakeholders. Management plans for forests have often conflicted with native priorities for lands deemed to be part of treaty parcels. This is an ongoing issue, but one that is being addressed in pockets across the country where cooperative management agreements are in place. Specifically, for NTFP development, the issues include a need to coordinate NTFP extractions with timber harvesting, provide access to sites, minimize site damage, and emphasize non-destructive extractions. Within communities, there is also much heterogeneity and NTFP-related interests may be dissimilar, conflicting along gender, class or ethnic lines (Neumann and Hirsch 2000).

- ***Science – its role, its limits***

Science can help. But science also has its limits. How can it help? There is a vast shortage of basic ecological knowledge at both the levels of individual species and forest ecosystem. We need to know how amenable wild NTFP species are to scientific forest management. We need tools to quantify natural production rates for NTFPs. We need to know growth rates, harvesting regimes, and other biological characteristics of NTFPs. We need systems to monitor NTFP harvesting and ecological impacts. We need silvicultural prescriptions for NTFP management, and ways to integrate timber and non-timber extractions. All of this needs to be done in field-based studies, which are complex and long-term by nature. Some answers may come from forest and environmental historians who have studied how society before the 1950s managed to integrate timber and NTFP collection. Or from ethnobotanical research on forest management practices in tribal societies. Much of that work is fragmented and scattered and needs to be collected and organized to distill important information on local management (Neumann and Hirsch 2000).

On the social and economic levels, we need to understand many aspects – what makes a marketing cooperative work or not work; how do land and resource tenure affect NTFP prospects; what are the potential points of conflict between scientific and customary forest management; and how should joint management institutions be structured to benefit both state and community.

By its very nature, science is an orderly, stepwise endeavour, with clearly defined hypotheses and rigorous statistical analysis. It is a linear process orchestrated to prove or disprove. Unfortunately, conventional science is ill-suited to certain kinds of exploration. It does not handle issues with many factors or interactions among factors, despite the claims of modern quantitative methods. The Scientific Method takes a unified whole and breaks it apart in order to study manageable pieces; but there is no guarantee that once fragmented, the whole can be accurately reconstructed at the end.

Science can shed only a dull light, if any, upon elements involving human experience, wisdom, common sense, or faith. Scientists often dismiss these things as unscientific, rather than acknowledge the constraints of their tools. We must recognize that while science and research can provide some answers to the

biological, social, and economic questions, these answers may necessarily be restricted in dimension. A prerequisite question to pose before embarking on any scientific investigation on NTFPs is, “What will constrain the capacity of this investigation to provide the necessary answers?” or put another way, “What will this work really tell us that will help us to move forward?”

RECOMMENDATIONS

Emphasize Ecotourism

An ecotourism context for the NTFP sector is especially relevant to Alaska for the following reasons:

- It meshes nicely with one of Alaska's three big industries: tourism;
- It complements the conventional forest products sector;
- It can incorporate NTFP values and their communication to visitors;
- It does not emphasize wild plant harvest and potential sustainability risks;
- It provides an outstanding vehicle for cooperation among government, native peoples, business, and researchers;
- It can focus on unique local history and practices;
- It can help preserve traditional knowledge;
- It does not require transportation of a product from a remote area;
- It can enlist practical help from visitors to meet local non-timber needs.

The various directions that ecotourism ventures can take are manifold, and include: informed tours, nature walks, craft classes, botanical gardens, and mushroom festivals as mentioned earlier. Other prospects might include herbal tea tastings, herb fairs, medicinal gardens, forest cookery workshops, seminars on forest garden cultivation, tours of NTFP businesses, short-term participation in NTFP ecological field research projects, forest photography, and demonstration/model forests. Synergistic marketing with existing tourism avenues can capitalize on existing markets and advertising routes.

There is valuable infrastructure already available in Alaska to develop educational aspects of a non-timber ecotourism sector, resident in institutions such as the Georgeson Botanical Garden (University of Alaska), the University of Alaska Museum Herbarium, the Alaska Botanical Garden in Anchorage, the Alaska Native Heritage Center, and the Alaska Boreal Forest Council.

In the short term, ecotourism ventures offer considerable promise. In neighboring British Columbia, it has been promoted as one of the most promising commercial non-timber opportunities for rapid development, along with NTFP products such as salal and florals, berries, "willow" furniture, and crafts (Tedder et al. 2000).

Use weed species or waste from forest operations

Collection of weeds that would otherwise be burned or chemically controlled as part of forestry operations could provide biomass for other products. (Some biomass and debris should remain on site for ecological benefits such as maintaining wildlife habitat and soil nutrient balance.) Collection of weeds and other products such as birch bark, boughs, etc., can be coordinated with normal forest operations.

Birch is a fine example of a species that is considered to be a weed in many regions, but yet has many impressive uses in the non-timber arena. In Minnesota, a relatively new venture called NaturTek, spawned by government, university, and industry is taking

birch bark products to market. That market has been valued at US $100 billion annually. One pharmaceutical derivative from birch bark sells for about US $500/mg (NaturTek, pers. commun.). I understand that Alaska native groups are involved in project planning with the University of Alaska to pursue opportunities involving birch bark extractives. The suite of birch sap products now available by Alaskan producers testifies to the potential of this versatile species to provide unique economic benefits.

Other traditionally undervalued species are also proving beneficial. In Ontario, a University of Guelph study is showing the utility of poplar in land reclamation. Its highly absorbent roots prevent rainfall from reaching solid waste reservoirs below and thus prevent contamination of water sources. It is anticipated that land reclamation may be a significant market area for use of this species (CRESTalk, summer 2001, a publication of CRESTech, Toronto, Ontario, www.crestech.ca). In Alaska, this type of technology may prove useful in treating defunct mine sites.

Waste materials such as emptied seed cones, pulp waste materials, and various byproducts of wood processing can serve as valuable sources of new products. Collection costs are low because the material is already being harvested for other purposes.

Develop value-added products

Value added products command a higher price than primary products. Developers can earn more with less plant material, thereby lessening the risk of excessive harvest and endangerment of wild stock. They offer niche markets and are well-suited to small entrepreneurial ventures. There is more buffering against the vagaries of bulk markets, and less competition from highly successful bulk suppliers.

An Alaskan business example is Alaska Wild Berry Products, which produces products such as Fireweed honey mustard, jellies, fireweed popcorn, and other products from highbush cranberry, wild red currant, wild blueberry, wild raspberry, wild strawberry, wild salmonberry, and wild lingonberry. In the arts and crafts sector, specialty products such as those from diamond willow (with its intriguing wood colours) in Alaska capture the interests of buyers.

Adding value to a product does not have to be complicated. In B.C., salal dipped in glycerin to preserve it or in pre-assembled pot pourri mixes by craft stores can help to increase sale price and offset any transportation cost disadvantage for remote areas (Tedder et al. 2000).

Cultivate NTFP species

Cultivation in the field, forest, greenhouse, or even laboratory (using tissue culture and mass micropropagation methods) will be an important facet of sustainable NTFP production. Cultivation reduces the pressures on wild stocks, extends the production season (a special advantage in northern climates), helps to produce more consistent quality, and provides for a more predictable flow of products. Organically produced plants are particularly in demand, and this can only be achieved on practical scales in a

cultivation regime. Alaska's long growing day in summer yields impressive agricultural produce – and can also be capitalized upon for growing of specialty herbals, unique landscape products, florals and greenery, and other NTFPs.

Quality control and certification of products is now a high priority for manufacturers of herbal products, and is central to concerns about health and safety of new products. Standardized extracts are becoming the norm, and herb suppliers are having to prove the content of their materials. For example, Frontier Co. in the U.S., a very large buyer, demands a certificate of analysis to be submitted with samples. With cultivated products, there may be a greater likelihood for achieving consistency and predictability of phytochemical contents.

Cultivation by means such as forest gardens should be encouraged. The First Peoples of northwestern North America were not simply "gatherers", but tended forest gardens using various methods such as selective harvesting, propagation, habitat enhancement, monitoring, pruning, cultural controls, and root aeration (Turner and Cocksedge 2001). For the latter, digging sticks used for gathering root vegetables served to till and aerate the soil.

Form cooperative ventures

Cooperative ventures can be beneficial in marketing, coordination of NTFP activities and general forest management, R&D, and representation of NTFP sector interests.

It is important to coordinate NTFP planning and activities with conventional forest timber operations, and cooperative ventures can pave the way for this type of activity. Also, since Alaska is trying to grow out of the industrial boom and bust cycles that have marked its traditional industries, NTFPs may be an important complement to conventional forest products (Maher and Dawe 2001). In other countries, it has been shown that silvicultural treatments can enhance production of some NTFPs while simultaneously allowing for sustained timber harvesting (Newmann and Hirsch 2000). However, certain forest management approaches may not be suited to NTFP development; this is especially relevant in Alaska, where conventionally used clearcutting in certain regions may be incompatible with other forest use interests (Deal et al. 2001). The Alaska Department of Natural Resources (Div. Forestry), which administers community

forestry, market development, and forest practices, may have a key coordination role to play here.

Cooperatives, in addition to all of the benefits cited earlier in the presentation, can also assist with introduction of e-commerce ventures. E-Commerce is the exchange of information, goods, services or money facilitated by the Internet or other electronic networks with customers or with other businesses. E-commerce between businesses in Canada is expected to increase more than 10-fold between now and 2004, growing from $800 million to an estimated $10.7 billion (Agriculture and Agri-Food Canada, http://www.agr.ca).

Cooperative ventures can facilitate R&D, bringing together different groups to share knowledge and conduct studies. Interest in applying traditional ecological knowledge to modern-day forest management and business development is being pursued in the context of projects such as that for assessment of NTFPs in northwestern Ontario by a cooperative of harvesters and researchers from the Iskatewizaagegan #39 Independent First Nation and the University of Manitoba (Davidson-Hunt and Ruta 2001).

Focus on rural and community-based opportunities

Development of niche products with a local character can be a profitable venture for many communities. A good example is the range of manomin and wild berry products being created by Ontario's Wabigoon Lake First Nation (Kagiwiosa), where traditional knowledge is being applied to produce interesting new specialty foods. Such products are novel and may be more successful in the marketplace.

Another advantage to the community focus is the lower likelihood that a product may be overharvested, because of the more personal commitment of locals to their forest. This is not always the case if local harvesters are supplying distant buyers with burgeoning demands.

Conduct appropriate Research and Development

Research and Development is an important part of the NTFP sector because there are so many elements to this vast sector, there is a tremendous need for information, as well as a reassessment and organization of existing knowledge. R&D, done through cooperative ventures will be key to productive efforts, especially in applying traditional ecological knowledge, and in coordinating NTFP activities with conventional forest timber management. The players in these ventures should include appropriate partners, such as government agencies responsible for stewardship of the resource, First Peoples, entrepreneurs, community partners,

and the research community.

In addition to the questions and needs raised earlier for R&D attention, an important subject is that of emerging products. These include children's herbals, phytoestrogens, and biocides (non-toxic insecticides), anti-phytovirals (medicines for plants), native landscape plants, and biofuels (Mohammed 1999, Wills and Lipsey 1999). Quality control and product safety for health-related products will be an ongoing priority.

Is science equipped to address the challenges? It is limited by conventional approaches of the Scientific Method. Science needs a certain reshaping to be useful to the broader NTFP industry, and will need to be evaluated for efficacy of its methods to provide useful answers. In particular, approaches that provide for better study of multiple attribute issues will need to be worked out, and these may include greater reliance on traditional ecological knowledge.

Much information already exists and needs to be gathered, organized, and transferred. Scientists and government have an important responsibility in this regard. Educational and training aids, informational workshop and conferences, and information-sharing associations can all play a part. Developments that provide examples of this kind of activity include:

- NTFP website for information exchange from Virginia Tech University (http://www.sfp.forprod.vt.edu)
- U.S. NTFP product database website (Institute for Culture and Ecology), organized by species and state (http://www.ifcae.org/cgibin/ntfp/)
- A manual for growers of medicinal and aromatic plants, for interior B.C., by A. Gunner (1998)
- Conferences such as Phytotherapy Canada 2000, organized by the Ontario Herbalists Association (http://www.herbalists.on.ca/events/)

CONCLUSIONS

Developing a viable non-timber forest sector is tantamount to redefining forestry in North America. We are still very much enmeshed in the conventional way of things to sustain primarily timber and other standard wood products. But the desire is growing among all those with an interest in the forest to bring a viable NTFP industry into fruition. That will require a long-term commitment because so much is to be learned about managing for NTFP products. Importantly, NTFPs must be developed within the context of non-timber values to have any lasting importance. Getting there will demand the cooperation of diverse individuals and groups. But it will be worth the effort.

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