THE PRACTICE OF HOLISTIC DECISION MAKING IN REGIONAL PLANNING PROGRAMS — THE CONFEDERATED TRIBES OF THE COLVILLE RESERVATION CASE STUDY

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the thesis of CARL JEFFRY

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Abstract

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Governments of all sizes and types have difficulty achieving the values important to the communities represented by those governments, including meeting short-term needs and fostering long-term sustainability. This thesis describes a decision-making framework used by one government from 1992 to 1996 to assist its representatives in visioning, developing agreement, redirecting efforts, and implementing strategies and actions to foster desired short-term and long-term outcomes.

This decision-making framework, Holistic Management, can be useful for most governments and is especially useful for governments responsible for a land base, such as nations, states and tribes. In documenting this decision-making framework important elements of effective management concepts are examined.

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DEDICATION

To my father and mother, Dr. Carl Jerome and Patricia Ann Goebel,

and my two sons, Paul Jerry and Jonathan Michael Goebel,

who are my connection with the past and the future and are why I do this work.

I also dedicate my work to my wife, Sally, who is my connection with the present,

for her understanding to give me the time I needed to complete my thesis

and be the coyote in my life, giving me the gift of growth.

These wonderful people are the love of my life.

CHAPTER 1. INTRODUCTION

1.1 Problem Statement

Many writers and researchers have addressed the problem of how to manage natural

resources to achieve particular goals. Others have developed systems and frameworks for

weighing options and making decisions in business and government, while still others have

developed methods for helping groups of people work together to develop a consensus on

common goals and enterprises. What has been missing up to now is a holistic framework that

integrates natural resource management, systematic decision-making, and the human element of

group dynamics and consensus building to foster an organization (public or private) that sustains

both the people and the natural resource base.

1.2 Study Purpose

This study illustrates, through case analysis, a holistic decision-making process that

integrates all three elements discussed above. It describes a model for how a body of people,

organized as a democratic government, can come to an agreement on a common goal and begin

making decisions and taking actions that yield successful social, economic, and ecological

results. It also identifies issues for further study.

1.3 Research Objectives

- To review literature in the fields of effective decision making, systems thinking and sustainability, and the human elements of behavioral change, power, conflict and consensus, and community; identifying what others are doing and where gaps exist in current practices;

- To develop a model for integrating the three elements of natural resource management; systematic decision-making, and consensus building, based on actual practice in the field;

- To develop a set of recommendations on how to apply this model in other situations; and

- To provide recommendations for further study.

1.4 Thesis Overview

Chapter 2 is a review of literature information sources that significantly influenced the practice of Holistic Management at the Colville Indian Reservation, emphasizing the modifications to the model that were particularly valuable to work with the people. Chapter 3 discusses the methodology used to develop credibility, transferability, dependability, and confirmability of the case study.

Chapter 4 is a case study of the work done with Holistic Management from 1992 to 1996 at the Colville Reservation. A diagram of a modified Holistic Management Model is presented; the case study follows this diagram. This thesis emphasizes the elements of the model that address the human components. Some elements of the model are not discussed in this case study, as their relevance to the thesis is minimal. Following the case study, two specific elements of the practice of Holistic Management within the tribal government are illustrated, one dealing with the practice of Holistic Management in watershed settings and the other dealing with Holistic Management Financial Planning for the entire tribal government.

Chapter 5 offers insights into what was learned; discusses the value of this case study for governments throughout the world, from the local to the national level; and lists some of the shortcomings of the project discussed, along with suggestions for future study. The appendices and figures illustrate points within the thesis.

CHAPTER 2. LITERATURE REVIEW

This section describes some of the tools and methods used to foster the conditions necessary

to achieve the outcomes at the Colville Indian Reservation. The overriding concept is the

Holistic Management Model, which formed the framework for decision-making at the Colville

Indian Reservation that is discussed in this thesis. Other tools, methods, and concepts that

substantially contributed to successful results are also discussed. These concepts were often

parallel processes, but were described from a different approach than the standard Holistic

Management Model.

> Engineers say that a new idea has been "invented" when it is proven to work
> in the laboratory. The idea becomes an "innovation" only when it can be
> replicated reliably on a meaningful scale at practical costs. If the idea is
> sufficiently important, such as the telephone, the digital computer, or commercial
> aircraft, it is called a "basic innovation," and it creates a new industry or
> transforms an existing industry (Senge 1990).

In these terms, practicing Holistic Management at a government level has been invented, but

has not yet been innovated.

> In engineering, when an idea moves from an invention to an innovation,
> diverse "component technologies" come together. Emerging from isolated
> developments in separate fields of research, these components gradually form an
> "ensemble of technologies" that are critical to each other's success. Until this
> ensemble forms, the idea, though possible in the laboratory, does not achieve its
> potential in practice (Graham 1980).

> The Wright Brothers proved that powered flight was possible, but the
> McDonnell Douglas DC-3, introduced in 1935, ushered in the era of commercial
> air travel. The DC-3 was the first plane that supported itself economically as well
> as aerodynamically. During those intervening thirty years (a typical time period
> for incubating basic innovations), myriad experiments with commercial flight had
> failed (Senge 1990).

Like early experiments with practicing Holistic Management in government, the early planes

were not reliable and cost-effective on an appropriate scale.

The DC-3, for the first time, brought together five critical component technologies that formed a successful ensemble. They were: the variable-pitch propeller, retractable landing gear, a type of light-weight molded body construction called "monocque," radial air-cooled engine, and wing flaps. To succeed, the DC-3 needed all five; four were not enough. One year earlier, the Boeing 247 was introduced with all of them except wing flaps. Lacking wing flaps, Boeing's engineers found that the plane was unstable on take-off and landing and had to downsize the engine (Senge 1990).

This thesis is about moving from the invention of practicing Holistic Management in government toward creating the basic innovation.

A. Holistic Management Model

The Holistic Management Model is a framework to guide holistic decision-making. Allan Savory developed this "thought model" to give people the ability to foster holistic and sustainable decisions. Preston Sullivan of the USDA Appropriate Technology Transfer for Rural Areas (ATTRA) program, provides this succinct introduction:

> Holistic Management is a simple decision-making framework that can be learned like any other skill. People who manage holistically can realize an improved quality of life and generate real wealth, while at the same time improving the land and community around them. They develop the ability to ask the right questions and to confidently proceed toward the future they design for themselves. Holistic Management is for anyone who wants consistent profit from agriculture, a high quality of life, and more time to enjoy it. In short, it's a way to have fun, make money and conserve our natural resource base, all at the same time.

> Holistic Management is a process for sorting out and making sense of all the tools and choices that face us each day. Once a person begins to manage holistically, he or she learns what to say no to, and what to say yes to. Being a proactive process, holistic managers learn how to move beyond crisis management and toward planned prosperity. They are able to manage their finances wisely, have more time for enjoyment, live life according to their values, and gain the confidence of knowing that their decisions are improving the environment and the community they live in—leading to a better world for their grandchildren (U.S. Department of Agriculture 1999).

Savory earned degrees in zoology and botany and began his career as a wildlife manager for a game reserve in Rhodesia (now Zimbabwe). A large part of his work was tracking poachers of rhino and elephants to bring them to justice. As he crossed vast regions of Africa, he noticed that land settled by white compatriots who used modern principles of management was deteriorating. In areas kept pristine because of problems such as tsetse fly, the lands and rivers were healthy and vibrant, and wildlife abundant. Savory discovered certain patterns of unimpeded animal migrations and relationship of time, the role of predators, and the decay processes of carbon-based material in various environments. After the war, he used his observations to consult with ranches, gaining similar results to the land as he had witnessed in the pristine regions of Africa.

Savory has contributed significantly to the idea of sustainability. He has identified what he calls the four missing keys important to sustainability of society. These are 1) the understanding of a difference between brittle and non-brittle environments, 2) the important relationship of the predator and prey (herding ungulates), 3) that overgrazing is a function of time exposure to plants by animals rather than by numbers of animals (Voisin 1988), and 4) the importance of holism in making decisions affecting people, land and money. The basis for his thinking about holism comes from the work of Jan Christian Smuts in his book *Holism and Evolution* (Smuts 1996).

Savory also observed limitations ranch managers had in successfully continuing the practices he was recommending. He added the concept of managing holistically to enable a higher level of success. During the course of his work, he was granted permission to stay in the United States, where he formed a not-for-profit organization to continue his work. The Allan Savory Center for Holistic Management was created by a group of ranchers, environmentalists, and university and government agency representatives to continue promoting the work of holistic

decision-making. The Holistic Management Model is the primary product of this organization, and educational and managerial services are provided to spread this knowledge.

Savory places a strong emphasis on grazing in his model and teachings. He does this deliberately to address the problem of desertification globally, to which two-thirds of the earth's land is susceptible. Savory also introduces a strong component of military teaching in his process, a reflection on his time as a military officer in the Rhodesian army. Savory talks of the importance of discipline in thinking. His phrase, "sloppy words leads to sloppy thinking," illustrates the importance he places on accurate language to express accurate thought. He also taught of the power of observation and "listening to the land," as the land often tells you more than people can.

A significant failing of this model is the lack of emphasis on the importance of developing the people skills needed to successfully practice Holistic Management, particularly when more than one person is involved in the decision-making process. Savory often says that he would rather have a benevolent dictator who understood this model than a group of people who worked in consensus when addressing the issues of fostering sustainability. Unfortunately, a benevolent dictator does not exist in most settings around the globe, and there is a need to get sustainability occurring under democratic and other forms of government. Consequently, a process of fostering a consensual movement toward sustainability must be added to Savory's model of holistic decision-making. This thesis is an attempt to address such issues.

The following subsections of the literature review cover additional sources of information necessary for developing a successful strategy for practicing Holistic Management in governmental settings. The review starts from the more holistic perspective of systems thinking and sustainability, becomes more specific with a focus of working with human behavior and

intra- and interpersonal action, and ends standards and quality management. This format also follows the progression of the Holistic Management Model (Figure 1, p. 28).

2.2 Systems Thinking and Sustainability — Looking at the Whole Picture

Bob Chadwick introduced an alternative process that also leads to holistic decision-making. This inclusive process uses the richness of diverse perspectives to develop solutions that are holistic. Chadwick's consensus-building process was used to facilitate the development of the holistic goal at the Confederated Tribes of the Colville Reservation (Chadwick 1997a,b; 1998a, d, e; 1999a).

Peter Senge addresses systems thinking for organizations. He describes the importance of moving from invention to innovation. Senge uses the analogy of developing powered flight. The Wright Brothers created the invention of powered flight. However, it was not until five disciplines were added to the invention that powered flight became an innovation. The work described in this thesis is about moving the invention (Holistic Management) to innovation (with the added human development elements). Senge also describes some effective methods for identifying the social weak link (limits to growth) and cause and effect (shifting the burden) problems in an organization, which were useful in the author's work with tribal government (Senge 1990).

W. Edwards Deming illustrated several concepts of sustainability in businesses, which are equally applicable to governments. He stated that the ultimate purpose of business is to create jobs, not profitability. Consequently, businesses should be focusing on long-term sustainability with the focus being job creation (Deming 1986).

Deming's fourteen points create an effective holistic framework for corporate and government settings. These fourteen points were designed for the American business culture and

need to be practiced simultaneously or the result is failure. The fourteen points significantly influenced the author's work with the Tribe. To begin with, leaders needed to provide *Leadership*. *Constancy of Purpose*, *Adopt the New Philosophy,* and *Break Down Barriers* related the practice of Holistic Management and the creation of a holistic goal as the cornerstone of our work. *Cease Dependence on Mass Inspection* suggested we do less regulating and more improvement, building quality into our work, including supporting the point of *Continual Improvement*. *Training for Skills* and *Education and Growth* was a major investment of our work, both personal and professional development, including encouraging an emphasis on learning the cultures. *Driving Out Fear* and *Removing Barriers to Pride of Workmanship,* and *Dropping the Annual Merit Review* had an important emphasis in dealing with the employees and tribal members. We focused on buying a quality product or service, not just an inexpensive one, which is part of *Ending the Practice of Awarding Business on the Basis of Price Tag Alone*. *Eliminating Slogans, Exhortations, and Arbitrary Targets* and *Eliminating Numerical Quotas for the Workforce* helped to stop practices that dehumanized the employees. We were very action oriented. The Tribe needed to exist as a government and a business in a constantly changing world, so the final point of *Take Action to Accomplish the Transformation* was very evident (Deming 1986).

2.3 Effective Decision-Making and Success

Clive Ponting writes about human's challenging history with the ecosystem from the time of domesticating crops around 9000 years ago. He discusses the pattern of collapses of civilizations due primarily to the destruction of their associated ecosystems. His writing leads one to the question, "how long will it take for the American society to collapse ecologically? …500 years? …1000 years?" (Ponting 1991) This book was helpful in understanding that population is not

the primary cause of ecological deterioration, but how humans make decisions. A new decision-making model could lead humans to more desirable, sustaining outcomes as a species.

James Hardy developed an effective strategic planning process that was implemented successfully at the Colville Tribe, with modifications using the Holistic Management process. Hardy pointed out the importance of planning as a progression from desired long-term ideal goals to current actions. Ideal goals are like the holistic goal, which will be covered in this thesis. The next step is to plan more immediate five-year goals, annual objectives, action steps, and associated budgeting, which are consistent with the ideal goals. He also pointed out the importance of constantly reviewing performance. Hardy's work created a framework to bring holistic decision-making into government. The resulting strategic planning could use holistic testing to ensure annual objectives and actions are consistent with the holistic goal and then develop an accompanying budget (Hardy 1984).

Hardy also introduced a conceptual model of organization functioning. Trust is the foundation. Effective communication is the next level. The next step is to set goals, and finally, the top level is control. In a healthy organization, a pyramid exists where there is a broad base of trust and a narrow top level of control. In unhealthy organizations, trust is a narrow base with control being a wide top level, resulting in organizational instability. These concepts were very useful in communicating the importance of building trust within the tribal government.

Many of the sources cited in this literature review discuss qualities successful planners and decision-makers must possess. The work at the Tribe was not just the applications of a set of processes. Leadership qualities within planners and leaders are critical to success. The following paragraphs reflect some of the literature available to develop the qualities necessary for this kind of success.

Warren Bennis studied the patterns of successful leaders. These patterns identified four strategies effective leaders use: attention through vision, meaning through communication, trust through positioning, and the deployment of self (Bennis 1985). These strategies were incorporated into the work at the Confederated Tribes of the Colville Reservation.

Napoleon Hill was hired by Andrew Carnegie to study the most successful people of their age and create a document describing the patterns he identified. Some of the patterns that were especially meaningful to this thesis include the concept that *thoughts are things*. What a person tends to focus on tends to become reality. Also related to this is the role of *desire* and *faith*. There must be a drive to create something, the ability to visualize the desired outcome and the belief that the desired outcome can be attained. The author also learned about the power of the subconscious mind through *autosuggestion*, and the ability to get your brain working for you, even below the conscious level. *Imagination* is a powerful means to activate the brain. We used *organized planning* to "crystallize desire into action." *Decision* masters procrastination and *persistence* is necessary to induce faith. The author also used the *power of the mastermind*, the opportunity to get two or more people to work together to solve challenging problems. Two minds working on a problem can become like a third mind, formed from the benefit of both minds. Hill also identified what he calls the *Six Ghosts of Fear* preventing success. These are the fears of poverty, criticism, ill health, loss of love, old age and death. These six fears lead to a paralysis of action (Hill 1966). This understanding led the author to discover a process to remove the causes of paralysis so the team could accomplish goals that were important to the Tribe.

Brian Tracey developed a set of assessment questions to allow people to identify important personal goals. This process assesses values and clarifies the consistency between current

actions and desired outcomes. Often, this set of questions changes people's direction in life. These questions were used at appropriate times to help tribal members and employees get focused on what really mattered to them (Tracey 1984). Denis Waitley worked with prisoners of war as well as Olympic and Super Bowl athletes. He studied the characteristics of successful people. These characteristics are self-esteem, creativity, responsibility, wisdom, purpose, communication, faith, adaptability, perseverance, and perspective. Again, a similar pattern exists with Waitley's characteristics as are found with other writers of the qualities of successful people. Waitley influenced the importance of integrity and adaptability in one's work (Waitley 1983).

Tom Peters is best known for his research identifying the patterns of successful organizations. Many of the patterns he identified for creating successful organizations were included in the work at the Confederated Tribes of the Colville Reservation. For example, his concept of managing by wandering around inspired me to get out with the tribal members and employees to learn what was important to them, what their issues were, and their creative ideas to solve those issues (Peters 1982).

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Og Mandino has had a profound impact on numerous people, including authors who have investigated and written about patterns of fostering success. Mandino gives insights, in the forms of fables, into how to be successful using daily activities to develop the habits of success (Mandino 1978).

2.4 Creating Sense of Community, Oneness, and the Value of Diversity

Francis Moore Lappé, author of *A Diet for a Small Planet,* later worked in Ukiah, California, teaching her concept called "Citizen Democracy." This process focuses on the empowerment of communities' citizens through active, structured working sessions to create a strong voice in the process of community planning. This requires a commitment from top leaders to support the work, lending credibility to the process. Community members become very engaged in this process (Lappé 1994). Lappé's format ideas were used to create a vision of what could be possible. Since the tribal members, through representation in the Council, were the author's ultimate employers, the author felt an obligation to know what they wanted for their future.

Bob Chadwick teaches consensus building, the ability to get 100% agreement by a community to do the *right thing*. This agreement is demonstrated through behavior and not necessarily words. He talks of the importance of turning people from focusing on a common *enemy* to focusing on a common *purpose*. He also helps people turn their *point of view* into a *viewing point*, learning to see other perspectives besides their own (Chadwick 2000a). Chadwick also teaches that while *sameness* initially fosters a sense of *comfort*, over time sameness leads to *boredom*. Conversely, while *diversity* initially fosters a sense of *fear* for those that are different, over time, diversity can lead to a sense of *richness* due to the added value of diverse perspectives (Chadwick 2000b). Though these concepts were a major part of the philosophy for the work at the Tribe, the author did not gain these skills until later in the work at the Tribe.

2.5 Creativity, Paradigms and Adaptability

Joel Barker illustrates the limitation of paradigms, called "paradigm paralysis," and the opportunities to move beyond existing paradigms in order to foster more desirable conditions. Barker influenced the author and others at the Tribe with the understanding that our paradigms

can prevent us from seeing better ways of doing things. Baker uses the example of what the

Swiss did when they invented the quartz watch. They found it of little value because it did not

have springs and gear, so they essentially gave it away to Seiko and Texas Instruments. Within

15 years, the Swiss lost 55,000 out of 65,000 watchmaker jobs, because they were paralyzed by

their own paradigms (Barker 1993).

Thomas Kuhn suggests that scientists will always judge new ideas in the light of prevailing

beliefs, or paradigms. They can never be objective about new information. If a new idea is in

line with what we believe, we accept it readily. But when a new idea goes against our

experience, knowledge, and prejudices — what we know rather than what we think — our minds

block it out, distort it, or rebel against it (Kuhn 1970).

Art Beveridge writes of the challenges for science in adopting new ideas:

> In nearly all matters, the human mind has a strong tendency to judge in the
> light of its own experience, knowledge, and prejudices rather than on the evidence
> presented. Thus, new ideas are judged in the light of prevailing beliefs. If the
> ideas are too revolutionary, that is to say, if they depart too far from the reigning
> theories and cannot be fitted into the current body of knowledge, they will not be
> acceptable. When discoveries are made before their time they are almost certain
> to be ignored or meet with opposition that is too strong to be overcome, so in
> most instances they may as well not have been made. (Beveridge 1957)

This struggle has prevailed for years in the work of holistic decision-making.

Bob Chadwick teaches about the importance for humans to be adaptable, stating it is not the

fittest who survive, but those who are most adaptable when confronting change. He uses an

activity called "adaptive learning" in which learning is formalized and internalized for difficult

situations. He also teaches people to expand the realm of possibility by asking people to do the

impossible. After participants develop a best possible outcome for a situation, Mr. Chadwick

asks two questions: 1) List all the reasons it's impossible to attain the best possible outcome. 2)

Given that it's impossible (because of the previously stated reasons), if it were possible, what

would you do? This sequence frees up the mind to explore possible solutions, which generally

work, much to our surprise (Chadwick 1999d). Again, this work was practiced in the author's

final years with the Tribe and allowed us to make great strides. We were practicing the ideas of

adaptive learning as evidenced by the positive changes we experienced throughout the entire

process.

2.6 Effectively Dealing with Positional and Personal Power — Self-esteem

Positional power is the power recognized by a body of people. This can be the power

designated through a democracy with elected officials; people hired within an organization in a

capacity of leadership and management; or developed through personal acquisition of resources

which manifest power, such as money, knowledge, or even military power. Personal power is a

right received at birth for every individual, though this power may not be expressed. This power

can be used for either good or bad actions, a choice individuals make as part of that power. Bob

Chadwick teaches a workshop series about confronting the conflicts associated with power,

empowerment, and participatory democracy (Chadwick 1999b, c). These ideas played a

significant role in the work at the Tribe. The author observed a power struggle between the

professional foresters and the tribal members' desires for the management of the forests. Our

team was able to slowly struggle through the shift of power to the tribal members, while valuing

the important contributions of the foresters. Power dynamics and power struggles are an

intricate part of working with individuals and communities.

Many authors have written about methods to increase the sense of personal power, which is a

heightened level of self-esteem. Brian Tracey has researched the patterns of achievement. One

particularly useful concept is about developing self-esteem. Self-esteem is equal to a person's

concept of their self-ideal minus the concept of their self-image. The narrower the gap, the

higher the performance (Tracey 1989). Denis Waitley has also researched how to improve self-esteem. Waitley talks about how central positive self-esteem is to being successful and peak performance (Waitley 1983). These concepts were incorporated into the work at the Confederated Tribes of the Colville Reservation. Again, these concepts are useful for helping others be successful; however, they are intricate components of leadership as a planner. In the author's experience, the planners with leadership qualities such as high self-esteem are most able to create positive change within communities.

2.7 Behavioral Change and Motivation – the Driving Forces

The following introduce important ideas about how planners can foster changes within government and communities. Setting up correct mental structures creates opportunities for motivation to generate needed change. A *desire,* as mentioned previously, is the first step to fostering motivation. If a mental image can be created to allow people to understand the value of changing versus the negative consequences of not changing, the individuals or groups are more willing to move toward their desired outcomes. Individuals must also have the belief that they can make the necessary change. Sometimes this happens through first realizing numerous small successes. If they can do little steps, they can move to larger steps, as occurred at the Tribe and is illustrated as one of the strategies in the case study. Planning leaders must believe desires can be attained, even if others cannot believe in their abilities in the beginning.

Bob Chadwick allows people to express their worst possible outcomes of confronting and not confronting a situation they face. As they describe this and acknowledge the possibility of both their best and worst possible outcomes, they become confused psychologically about what to do, since both often outcomes are very similar. Allowing the mind to refocus on the best possible outcomes in confronting a situation offers an opportunity for to resolve this dilemma. Chadwick

also suggests the human mind is a problem-solving organ, continually seeking resolution. If the mind is not able to resolve an issue, the ability of the mind to accept "I don't know" or "it's impossible" allows enough resolution for the mind to come to peace. The gap between the present situation and the best possible outcomes creates tremendous motivation in Chadwick's workshops; Chadwick tells participants, "the best possible outcome will be attained; now, how do you do that?" When Chadwick draws a "B__D" on a flip chart during a workshop, participants automatically fill in the space. Chadwick calls this the "Vanna White effect," after the woman who turns the blank spaces into letters on the popular game show *Wheels of Fortune* (Chadwick 1997a, b).

Tony Robbins teaches about creating motivation in his book and audio series *Unlimited Power*. Consistent with Chadwick's consensus-building work is the idea of the motivational power between perceptions of *pain* and *pleasure*. Robbins suggests that the primary motivating emotion is pain, with pleasure secondary. If the perception about attaining a desired goal is very painful, Robbins suggests a person will not act. Robbins encourages people to imagine the pain of not attaining the goal while vividly imagining the pleasure of attaining the goal, creating motivation to attain the desired goal (Robbins 1987).

Robert Fritz's work fosters creativity and motivation. Fritz believes the motivation in our lives results from certain mental structures we develop. He mentions that many people have a structure like a wheel chair in which we move toward what we want and then move back to where we started. For example, people wanting to lose weight often suffer from this kind of structure. He suggests we create a structure with positive tension (toward a goal), which is stronger than negative tension (away from the goal). This structure has four components:

describe where you are (accurately), describe where you want to be, formally choose the result you want, then move on toward the desired outcomes (Fritz 1989).

Frederick Herzburg did studies to identify what motivates employees toward workplace satisfaction. The results show that the two most powerful positive motivators for job satisfaction are *achievement* and *recognition*. Often, money is considered a strong motivator. In Herzburg's research, he found that money was a negative motivator, only when a person did not have enough, whatever that is for each individual. The greatest factor for job dissatisfaction was *company policy and administration* (Herzburg 1968). In this thesis, a high level of emphasis was placed on creating opportunities for people to become part of the plan developing process; consequently, they were often highly motivated to accomplish the work and they had pride in that work. Recognizing people for their achievements is also very important to create high motivation.

2.8 Resolving Conflict and Building Consensus – Participatory Democracy

Tom Crum teaches conflict resolution through the metaphor of aikido martial arts, which promotes self-defense. The first step is choosing to be centered when facing a potential conflict. This provides stability as the conflict is directed to a positive outcome. Next, he encourages the individual to connect to and be open to learning about and understanding the opposing party, resulting in new perspectives on the issue. Finally, Crum encourages a willingness to change your own perspective and to choose a new solution based on both perspectives. He also has a saying that helps put situations in perspective: "Don't sweat the small stuff. It's all small stuff!" His work teaches how to channel the energy of a negative confrontation toward harmlessness for all parties (Crum 1987). The author has been successful applying these methods of conflict

resolution and has found them useful for dealing with conflict and building consensus within government or communities.

Don Green introduces techniques for conflict resolution that were used during most of the author's time at the Tribe. Through private interviews, which were not confidential, though the interviewee would remain anonymous, the author would ask about the situation, blocks preventing the team from being effective, strengths and weaknesses of each team member, and possible solutions for the team (Green 1993). While this process provided a structure for resolving conflicts, it left people feeling hurt and disrespected. Also, the results were short-lived, with many conflicts resurfacing within six months. Bob Chadwick's consensus-building process was introduced to the Tribe during the project's third year, and it overcame these limitations.

One of Don Green's mentors was Jerome Lund, who wrote a book about confronting limiting beliefs and conflicts within individuals. Lund has done extensive work with people recovering from alcoholism and other addictions (Lund 1983). The author used these processes extensively when helping people at the Tribe.

Bob Chadwick teaches one of the most effective conflict-resolution and consensus-building processes the author has worked with to date. The process seems to align with the physiological functions of humans as they confront and deal with conflicts. The process is effective at the intra- and interpersonal levels as well as inter-group level. The author has adapted this process and uses it extensively around the world. The core questions of the process are: What is the present situation and how do you feel about it?; What are the worst possible outcomes of confronting/not confronting the situation?; What are the best possible outcomes of confronting the situation?; and What beliefs, behaviors, strategies, and actions will foster the best possible outcomes? A successful facilitator is "a guide on the side, not the sage on the stage." Equalizing

power, honoring participants, fostering balance, and creating diversity are important elements of this work (Chadwick 1997a, b; 1998a, d, e; 1999a-d; 2000a, b; 2001). This process moved the Tribe toward practicing Holistic Management at a broader scale, but required practice and repetition to learn.

2.9 Standards vs. Continual Quality Improvement

Another concept from W. Edwards Deming is that it is "far more profitable to build quality in rather than inspect it in." He said the cost of hiring inspectors and the cost of wasted, failed products far outweighed the cost of doing things right in the first place. At the Colville Indian Reservation, the concept of building quality in rather than inspecting quality in was extended to management of natural resources. Deming also discusses the importance of aiming for a higher level of quality than standards establish. This applies to dealing with regulations. Regulations are like standards, the minimal level required. A holistic goal often demands a higher level of quality. Deming also introduces the Shewhart cycle, which the Tribe used in place of the original concept put forth by Savory. The Shewhart cycle uses the concepts of: *plan*, *do*, *check*, and *act* (Deming 1986) and more accurately describes the learning process than Savory's concept of *plan*, *monitor*, *control*, and *replan* (Savory 1999).

CHAPTER 3. METHODOLOGY

One of the major issues in conducting case study research is how to go about documenting the processes used so that the case study has credibility and so that it is useful to researchers and practitioners. Guba and Lincoln (1981) have described a "paradigm for inquiry" that fits processes necessary in a case study such as this where the researcher is engaged in the system. They call this paradigm "naturalistic inquiry" (as opposed to rationalistic inquiry, which is the widely accepted paradigm for scientific inquiry). The naturalistic and rationalistic paradigms differ on certain key assumptions. These include: the nature of reality, the nature of the inquirer–object relationship, and the nature of "truth statements." The following quotation from Knowles describes the distinctions between the rationalistic and naturalistic paradigms.

> The rationalistic and naturalistic paradigms differ in terms of certain postures that characterize their practitioners. To further describe the distinctions between the rationalistic and naturalistic paradigms, Guba and Lincoln (1981) describe five axioms and the assumptions associated with them.

> Five axioms relate to the five factors: 1) the nature of reality, 2) researcher-phenomena relationship, 3) the importance of identifying general laws, 4) the determination of causal relationships, and 5) the role of values. The way one thinks about these leads to difference in the research methods employed in inquiry.

> Within the naturalistic paradigm the first axiom deals with the nature of reality and states that a *singular reality does not exist*, and emphasizes divergent, multiple realities. The rationalistic paradigm identifies reality as a singular, fragmentable, and tangible.

> The second axiom, which relates to *the researcher-phenomena relationship,* states that the object to be understood and the observer interact to influence one another, which leads to increased understanding. The rationalistic view emphasizes prediction and control and places the observer outside the object being observed.

The third axiom concerns *the importance of identifying general laws*. The rationalistic paradigm emphasizes the discovery of scientific laws, or the search for generalization. The naturalistic paradigm claims that "certain phenomena cannot be separated from context in which they are embedded" (Barr 1984).

A fourth axiom focuses on the *determination of causal relationships*. The rationalistic philosophy, with its emphasis on prediction and control, attempts to determine cause and effect relationships within the observed phenomena. In contrast, the naturalistic philosophy does not attempt to do this; it uses "patterns" or "webs" of interaction that must be viewed in their totality.

…an action may be explainable in terms of multiple interacting factors, events, and processes that shape it and are part of it; inquirers can, at best, establish plausible inferences about the patterns and webs of such shaping in any given case. The best methods for assessing these patterns and webs is the field study that deals with them holistically and in their natural contexts (Guba and Lincoln 1982).

Finally, the fifth axiom involves *the role of values*. The rationalistic perspective views the researcher as neutral or objective. Naturalistic inquiry is described as "value-bound" by the nature of the problem, the researcher, and the methods and framework used in the study.

Understanding and following the naturalistic paradigm and its underlying axioms has enormous implications for the conduct of research. Guba and Lincoln (1982) believe that researcher must understand how these beliefs or axioms affect actual research operations. For the inquiry to be considered credible or trustworthy, the researcher must be consistent between what he/she believes and what he/she practices in the field. Establishing trust in the outcomes of the inquiry requires careful planning and consideration throughout the study (Knowles 1987).

Table 1. Scientific and Naturalistic Terms Appropriate to the Four Aspects of Trustworthiness (Guba 1981)

Aspect	Scientific Term	Naturalistic Term
Truth Value	Internal Validity	Credibility
Applicability	External Validity	Transferability
	Generalizability	
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability

The four aspects of trustworthiness, as illustrated are credibility, transferability,

dependability, and confirmability. *Using prolonged engagement*, persistent observation and peer

debriefing, *doing triangulation*, *collecting referential adequacy materials,* and *doing member checks* can lead to credibility. *Collecting thick descriptive data* and *doing theoretical/purposeful sampling* can foster transferability. Dependability can result from *using overlapping methods*, *using stepwise replication*, and *leaving an audit trail*. *Doing triangulation* and *practicing reflexivity* (an audit trail) can lead to confirmability (Guba 1981).

This thesis summarizes several years of work by the author. The process of reflection, acting, and testing to reinforce ideas used throughout the case study fits nicely with Guba and Lincoln's (1982) techniques for establishing trustworthiness. The research, evaluation, and decision-making processes used during the work at the Colville Indian Reservation were documented in detail. The following examples show how the processes used meet the four criteria for trustworthiness laid out by Guba and Lincoln (1982).

3.1 Credibility

Use prolonged engagement — The author worked as an employee for two and a half years, consulted for another year and a half, and continued to interact for an additional three years while Project Coordinator for the WSU– Kellogg Foundation Holistic Management Project. The total time with the Tribe to date has been over seven years.

Use persistent observation —Significant time was spent at all levels of the tribal system, both in government and with tribal members, including being a member of the elder's Cultural Committee and interacting frequently with the Colville Business Council. The former Natural Resource Department secretary is a traditional Nez Perce woman who involved the author in the Seven Drum religious activities of the longhouse. There were opportunities to participate in the sweathouse and other festivals at the Tribe. Numerous conflict-resolution activities, strategic planning sessions, and field trips with various government entities throughout the whole tribal

system provided opportunities for observation. The author also got involved with the Colville Tribe Enterprise Corporation and private tribal entrepreneurs.

Use peer debriefing — A core strategic team of natural resource professionals was used throughout the work at the Tribe to brainstorm and develop innovative ideas to foster a successful program. Numerous tribal members shared observations and insights. Regional and national conferences also provided opportunities for peer debriefing

For example, the author's secretary at the Tribe was traditional and did not trust white people, the author included at the beginning. However, after a period of working together, she provided useful insights, advice, and support, and helped open doors to tribal elders. The author's stories reminded her of the stories elders used to tell her about the land and people. This eventually resulted in support for the holistic approach to planning throughout the reservation.

Do triangulation — Outside consultants were used throughout the process for purposes of developing credibility. A strategic team constantly tested ideas. Program participants at the Tribe and other tribes were consulted for their perspectives.

Collect referential adequacy materials — Numerous documents were developed, and much of the information is incorporated into this thesis. The entire strategic planning process and the Integrated Resource Management Planning (IRMP) process were documented in reports. Geographic Information Systems (GIS) documented spatial data about the Reservation. Audiotapes were made of tribal elders discussing their thoughts about culture, language, and tradition. All three languages were digitized on computer. Some video was produced.

Do member checks — Frequent checking with tribal members was the norm during this timeframe. There were numerous public meetings, including at the initiation and during and following activities. Private consultation with a great diversity of tribal members occurred.

3.2 Transferability

Collect thick descriptive data — The IRMP planning documents, along with GIS databases, include extensive descriptive data relating to the process and outcomes. Notes from the public meetings were transcribed and compiled into a planning document. This thesis is a continuation of documenting the data and process. The Tribal History and Archive program stores a tremendous record of tribal data and relics. Other programs throughout the Tribe also store descriptive data. Tribal newspapers also covered parts of the holistic planning process.

Do theoretical/purposeful sampling — This type of sampling is not intended to be representative or typical but is intended to maximize the range of information uncovered. Numerous opportunities were initiated throughout the course of this work, as illustrated in other sections of the thesis, such as holding conflict resolution sessions with other programs, which required extensive one-on-one interviews of all participants (100% sampling of the group). Most participation in activities was voluntary though several activities were mandatory.

3.3 Dependability

Use overlapping methods — Multiple processes existed throughout this project. The aim was to foster the most reliable and effective method for meeting the needs of the Tribe. Creative opportunities were encouraged. Numerous people were team leaders for projects. Projects occurred simultaneously. Often, the best learning from each approach was incorporated and merged into an enhanced approach. This is an example of the Shewhart cyclelearning from doing with a broad base (Deming 1986).

Use stepwise replication — Several opportunities for stepwise replication occurred at the Tribe, particularly with IRMP projects. The Six-Mile Springs and Owhi Lake IRMP plans began at the same time, with roughly a quarter of the team members represented on both teams.

Another example was the Holistic Management Financial Planning process in which 250 government programs worked in parallel with regular meetings with the author every two weeks.

Leave an audit trail — A formal journal was not kept; however; a paper trail of activities was kept intact and forms a basis for this thesis. IRMP and strategic planning documents are also explicit in the illustration of activities. Numerous people were involved and can act as an "audit trail" resource.

3.4 Confirmability

Do triangulation — As already noted under Credibility, triangulation activities were also done to support confirmability. These activities included collecting data from a variety of perspectives, using a variety of methods, and drawing upon a variety of sources so that an inquirer's predilections are tested as strenuously as possible.

Practice reflexivity (audit trail) — As mentioned previously, a collection of documents generated throughout the process were made and stored. Several of these documents are components of this thesis. Planning documents at the Tribe are also available.

This was a process of reflection and action to achieve desired outcomes. The methodology is appropriate to the research process used in this study. From a rationalistic stand, this is legitimate scholarly work that involves a process of reflecting, acting, and testing to refine ideas. The author applied the criteria for trustworthiness throughout the process. This project involved years of development and fieldwork and continued reading, reflection, and adapting. These methods were used to research and document the lessons learned during the work at the Colville Indian Reservation.

CHAPTER 4. CASE STUDY: DOCUMENTATION OF THE PRACTICE AT THE COLVILLE TRIBE

4.1 Confederated Tribes of the Colville Reservation

The Confederated Tribes of the Colville Reservation comprise twelve bands including three language groups from an original region spanning east of the Cascades in Washington (north of the Yakamas and Umatillas, down to Chief Joseph's band of the Ni Mii Pu (now called the Nez Perce) from northeastern Oregon and northcentral Idaho, up to the Palouse, bordered by the Coeur de Alene's and the Spokanes, then north into the Lakes and Okanogan region of Canada. The 1.3 million acre reservation lies in northcentral Washington State and was formed by the Presidential Executive Order in 1872. In 1996, an elected fourteen-member Council led the tribal government with an Executive Director hired by the Council through an annual contract. These people oversaw 250 programs and 1500 employees, which included two federal agencies, the Bureau of Indian Affairs and Indian Health Services (Confederated Tribes 1981).

4.2 Holistic Decision-Making Process

The Colville Tribe was using an interdisciplinary team planning approach to attempt to achieve natural resource goals and resolve conflicts. However, this approach was not working and the Tribe decided to try something else. The BIA was promoting Integrated Management, which, unfortunately, is the same as a single discipline or interdisciplinary approach in terms of the overall world viewpoint. The Tribe had managed from the "values" of scientific disciplines. This approach embraces a conventional decision-making process based on the single discipline, interdisciplinary, and integrated management methods.

Holistic Management empowers a community to manage its own destiny using science and other methods to achieve desired outcomes. The holistic viewpoint understands complex world functions in wholes. Table 2 compares holistic with more conventional approaches to making resource management decisions. Each progressive level reflects the basic initial assumption about the viewpoint of the complex world.

Table 2. Comparison between Conventional Decision Making and Holistic Decision Making

CONVENTIONAL		HOLISTIC
	VIEWPOINT	
Complex world of interconnecting parts		Complex world that functions in wholes
	GOALS	
Better life implied through many goals		One goal in three parts: quality of life, forms of production, future resource base (landscape description)
Problems treated as goals		Problem solving never a goal
	TOOLS	
Creativity/Money/Labor Rest, Fire, Technology, Living Organisms No tools that can cycle carbon over most of the earth's land surface		Creativity/Money/Labor Rest, Fire, Technology, Living Organisms Grazing and Animal Impact
	DECISIONS BASED ON:	
Expert opinion, past experience, research results, peer pressure, intuition, common sense, cost-effectiveness, profitability, laws & regulations, compromise, sustainability, etc.		Seven questions that ensure decisions are ecologically, economically, and socially sound, relative to the holistic goal
	MONITORING	
Assume all decisions are correct, and monitor to record results.		Assume decisions affecting the people and land are wrong, and monitor to produce results.

Describe the Whole Under Management

Decision-Makers – Resource Base -- Money

Define Your Holistic Goal

Quality of Life – Forms of Production – Future Resource Base

Assess Past and Present Conditions

Social   Economic   Ecosystem

Community Dynamics		Water Cycle
Mineral Cycle		Energy Flow

Apply Tools

Human Creativity (Rest   Fire   Technology   Living Organisms) **Money & Labor**

Evaluate Tools Using Testing Guidelines

Whole Ecosystem	Weak Link Social, Biological, Financial	Cause & Effect	Marginal Reaction	Gross Profit Analysis	Energy/ Wealth Source & Use	Society & Culture

Apply Tools Using Management Guidelines

Flexibility Strategic Tactical Operational	Organizational / Personal Growth	Time	Stock Density	Herd Effect	Population Management	Burning

Continue Improvement with Shewhart Feedback Cycle

Plan
(Assume Wrong)

Act   **Do**

Check

Modified from Savory (1999) and Deming (1986)

Figure 1. Modified Holistic Management Model

The Holistic Management Model, originally developed by Allan Savory (Savory 1999), was

modified by the author to better fit situation described in this case study. The Modified Holistic

Management Model used for the work at the Tribe is shown in figure 1. The case study is

described in steps, which begin at the top level on the model and progress down the model. The dashed line through the social/human elements of the model indicates the primary adaptations described in the case study to enhance the use of the model in government settings. Appendix A describes another version of the model used at the Tribe. This section describes the basic framework and the author's modifications.

4.2.1 Defining the Whole

The first step in holistic decision-making is to define the three areas of the whole under management: land, people, and financial resources. Defining the land area under management begins the process, as this step brings clarity to the extent of the elements being managed and sets a context for decision making. If the land area being managed is a ranch, a description of all land involved, owned and leased, is documented. If the land area deals with management of a species such as salmon, the area involved in the life cycle of that species is described. This important planning step allows variables to be dealt with while managing the situation.

4.2.1.1 The Land

The Tribe had three levels of authority that were relevant land areas to consider. The first level was trust land, which the tribal government has direct authority over. The second was individual allotments. The Bureau of Indian Affairs (BIA) had trust responsibility over these two levels. A third level was the usual and accustomed area, where laws dictate responsibilities when dealing with aboriginal rights and treaties. Hunting, fishing, root and berry gathering, ancestral, and water issues concern these bands throughout this region. The Tribe has various degrees of responsibilities and rights over this land.

4.2.1.2 The People – A Key *Part of the Whole*

The next step in defining the whole under management is to describe the people by asking, "Who is affected by or affects management decisions for that land area?" The list generated from this question is divided into two groups, "key decision makers" and "future resource people." Key decision makers, such as the tribal government and membership, directly affect management decisions. Future resource people support or detract from the management of the whole, but are not currently considered key decision makers. They affect management by buying or not buying products, supporting and being good neighbors, or fighting and taking the entity to court, undercutting actions, and other forms of passive, passive-aggressive and aggressive behaviors.

Working effectively with people begins with connecting with people. Holistic decision-making is no exception, but this has not been emphasized in the standard teaching of Holistic Management. Tom Peters once professed a concept called management by wandering around (MBWA), which is similar to the idea of walking a mile in another person's moccasins (Peters 1982).

In the project described in this paper, the author endeavored to gain trust and credibility by participating in important community cultural activities, such as:

- Longhouse ceremonies of the Seven Drum Religion, the main intact traditional religion at the reservation. This provided a valuable opportunity to learn about what is important in the culture.

- The annual Root Feast, which takes place every spring and celebrates the beginning of root digging for the season.

- Learning from and showing respect for the elders and their wisdom. Much of the knowledge and traditions of the Tribe exist only in oral form passed on by the elders.

- Salish language courses and informal lessons for the other languages at the Tribe. This allowed the author to incorporate some native words into the concept of holism, such as

inchawana, which means "everything" in Sahapton, and *iyatee snook soweel*, which means "all my relations" in Salish.

- The Cultural Committee, a committee of elders. The author was the only non-Indian member of this committee.

- Field trips and other opportunities for learning with many tribal members, from private individuals to elected leaders.

- The sweathouse and other activities including pow-wows, celebrations, and private parties.

These efforts to understand, respect, and participate in the culture were key to establishing the credibility that allowed this project to be successful.

4.2.1.3 Financial Resources

The third step of defining the whole is developing a list of all the current and potential financial resources and other assets available to the Tribe to address the management of the whole. In this step, resources such as cash on hand, grants, debts, facilities and equipment, tax bases, bonds and other revenues and obligations are listed.

4.2.2 Living Holistic Goal

Once the "whole under management" has been described, the next step in the holistic decision-making process is to define the holistic goal. Sometimes one person must develop the initial draft of the goal to start with, to begin the holistic decision-making process.

Because the purpose of Holistic Management is to describe the desired future so people can make decisions that move them toward that future, the holistic goal includes everything about the future that is important to the people who set the goal. Savory often said, "The goal should be something you are willing to die for," as it represents everything that really matters to you (Savory 1999). He also says that if you really *know* your holistic goal, you can live your life in a way that brings it about; the rest of the decision making model is not necessary.

The holistic goal has three components: the quality of life desired, the forms of production used to produce or support that way of life, and the future resource base required to sustain the quality of life. The quality of life component includes one's values and the way of life one desires to live and foster.

The forms of production include the social and economic conditions necessary to support one's quality of life. Naturally, a profitable business is often important for many entities. However, subsistence living may fit one's goal better; for example, many members of the Tribe still practice traditional ways such as hunting, fishing, berry gathering and root digging. Even so, resources are needed to pay for energy costs for transportation, cooking, lighting, and heating; and for goods beyond what the earth provides. Social values often reflected in the quality of life component of the holistic goal include fostering respectful listening; honor; dignity; balance of power; opportunities for education, housing, and health care; and freedoms to practice one's religious beliefs, seek meaningful employment, and speak openly.

The final component of the holistic goal, the future resource base, reflects the capability to sustain the quality of life well into the future, perhaps indefinitely. This component is often divided into two areas, social and ecological. The social component addresses the ability to sustain the quality of life. This clarifies how those people described in the future resource base from the "whole under management" will continue to support the entity. The human future resource base includes customers, neighbors, other government entities, citizens, etc.

The ecological ability to sustain the quality of life relies on the capacity of the earth to continue meeting life-giving needs such as air, water, food, and shelter. It is described in holistic decision making as the four ecosystem foundation blocks: community dynamics (which includes ecosystem succession), water cycle, mineral cycle, and energy flow. Often, people desire

complex, diverse communities, effective water and mineral cycles, reflected in covered soils and rapid breakdown of organic matter, and a high level of energy flow.

The holistic goal is considered a temporary or "living" goal, reflecting the need to continually adjust the goal with the key decision makers. The best way to address evolving situations is to begin with a holistic goal that reflects the future desires of the entity, then work with all key decision makers to develop it to incorporate what is learned as they practice holistic decision-making.

4.2.2.1 Development of the Holistic Goal for the Colville Reservation

The holistic goal for the Tribe was developed in several stages, culminating with the Tribal Business Council voting unanimously to accept the holistic goal (figure 2). The process of developing the holistic goal at the reservation included the following steps:

1. Since no one at the Tribe had been trained in holistic decision-making, and no previous holistic goal existed for the Tribe, the author started by developing a holistic goal for the Tribe even though no information about what tribal members wanted was available at first. This initial goal was based on what the author would want for his future, if he were a member of the Tribe. This initial holistic goal was used to begin making decisions about how the author would prioritize work as the new IRMP Coordinator.

2. The next step in goal development occurred within a month of starting work with the Tribe. Five tribal high school interns were available for a two-week project. The author taught the interns about Holistic Management and asked how they felt about their future and the future of the reservation. The interns did not believe the reservation would exist when they got older and voiced concerns about poor management by the current government and a belief

Confederated Tribes of the Colville Reservation

Holistic Goal

Temporary

Quality of Life

We want to maintain and build upon our unique culture, traditions, language, sovereignty and history; we want a healthy society, environment and economy; we will treat everyone with honor and respect, having the freedom to worship, live, work and play as we choose, accepting each others diversity/uniqueness.

We want to provide plentiful/affordable housing, meaningful/secure employment and educational opportunities. We want communities that are clean, self-sufficient, safe, wholesome and provide opportunities for family based recreation.

Forms of Production

We will support our quality of life through sustainable wealth from diverse income opportunities, without waste or sacrifice of tradition, culture and values; we will emphasize the importance of involving the membership in developing their communities; we will provide opportunities/infrastructure to increase understanding/awareness of our culture, traditions, language, sovereignty and history throughout our communities, schools and workplaces, continuously promoting honor, respect and diversity.

Future Resource Base

We are and continue to be a self-sustaining sovereign entity; having flourishing enterprises; having healthy productive landscapes including rangelands, croplands, forests, riparian areas, streams and lakes; tribal decisions will include protection of tradition, culture, and aesthetic values; we will continue to provide improved/enhanced opportunities to communities/schools/workplace to increase understanding and awareness of our culture, values, tradition, language, sovereignty and history.

The reservation remains as a rural life-style and the population is in balance with an effective water, mineral, and energy cycle with biodiversity resulting in an abundance of culture, medicinal and edible plants, clean air and water, springs and streams that flow year round, large trees, wildlife, fish and insects.

Enacted by Colville Business Council Resolution 1996-23 on January 18, 1996.

Figure 2. Holistic Goal Passed by Tribal Business Council

that no one seemed to care about the long-term situation. When asked what needed to happen to have a future they desired, the students said they wanted to create a holistic goal and get others to commit to it. The author challenged the interns to make this happen.

3. By Friday of the first week, the interns were familiar with holistic decision-making and holistic goal development, and were ready to begin setting the stage for the Tribe to develop a holistic goal. Their next task was to create a plan for developing a holistic goal and reporting their findings. They completed their plan within an hour.

4. The next step was for the interns to carry out their plan beginning the following Monday. They developed a survey that asked what tribal members desired for the future of the Tribe. The interns created surveys for 100 elders, community leaders, and peers (other high school students). Eighty-five surveys were completed. The students compiled the results and developed a presentation. In the final part of this initial phase of goal development, at the end of the second week, the interns presented their findings to the Colville Business Council (CBC), the Cultural Committee (elders group), and the director and thirteen managers of the Natural Resource Department. There was immense pride watching these young people share their vision of the future of the Tribe. This was the beginning of bringing the idea of a holistic goal to the Tribe. It also demonstrated the potential of young people.

5. The development of a holistic goal continued with the Natural Resource Department managers. After they saw the young people's presentation, they were willing to continue developing a tribal holistic goal, and to use the goal when developing long range plans within the department. We started our work in the department by defining the whole under management, and then developed a "living," evolving, or temporary holistic goal (**table 3**).

6. To be really effective, the holistic goal needed the support of all tribal members, not just the Natural Resource Department managers. A five-member tribal team was formed that was able to involve over 700 tribal members, ten percent of the population, in daylong goal setting sessions. After these meetings, each team member answered the question, "what did you hear the tribal members say?" then the team merged their five statements into one holistic goal for the Tribe. Ideally, an effective goal needs to reflect the desires and commitment of the ninety percent of the population that was not involved, as well as those of unborn tribal members.

7. Next, the team published the goal in the *Tribal Tribune*, the Tribe's newspaper, and asked people directly if anyone disagreed with the statement. When there was any disagreement, the changes were made. Eventually, the holistic goal took the form found in figure 3. This holistic goal was used and tested in several training courses that included the tribal leadership. The Council passed the holistic goal unanimously on January 18, 1996, and it continues to hang in the Council Chambers.

Even though it takes time and learning for most people to start thinking holistically, when a holistic goal is deeply understood decision-makers can begin to make decisions holistically. Stinner, et al. (1997) studied 25 Holistic Management practitioners and found that 80 % perceived increased profits from their operations and 91% reported improvements in their quality of life.

4.2.3 Assessing Present and Past Conditions

After defining the holistic goal, the next step in the holistic decision-making process is to accurately assess the present situation in relation to the holistic goal. Most people in the various

disciplines of the Natural Resource Department continued to struggle with their single purpose

goals of forestry, water quality, or deer management. These are reductionist goals. The holistic

goal allowed us to expand beyond the single-focus goal, by including the broader issues of the

TRIBE'S TEMPORARY HOLISTIC GOAL (9-6-95)	TRIBE'S TEMPORARY HOLISTIC GOAL (1-18-96)
Quality of Life:	
We have a healthy society, environment and economy that are acceptable within the context of traditional and modern values. Our culture and traditions, language, sovereignty and uniqueness are maintained. We are free to live, worship, work and play as we choose. We feel good about ourselves and have a deep respect for every living thing. We treat everyone / everything as our relations, with honor and respect.

Our communities are productive both economically and spiritually. There are educational and employment opportunities for all of our people. Housing is plentiful and affordable. Our communities are clean, self-sufficient, safe and wholesome. Where all our needs, health, cultural, educational, employment, spiritual, recreational, are provided. The health and welfare of our people is excellent. We have diverse communities, who respect and honor our past and use it to build toward our future. We have a strong family community structure with safe opportunities for family based recreation.

Our elders and children are loved, valued and cared for. The reservation remains as a rural lifestyle and the population is in balance with a stable ecosystem. We have healthy forests with big trees. Clean water that we can drink (safely, without health hazards) from our | We want to maintain and build upon our unique culture, traditions, language, sovereignty and history, we want a healthy society, environment and economy, we will treat everyone with honor and respect, having the freedom to worship, live, work and play as we choose, accepting each others diversity/uniqueness.

We want to provide plentiful/affordable housing, meaningful/secure employment and educational opportunities. We want communities that are clean, self-sufficient, safe, wholesome and provide opportunities for family based recreation. |

streams. An abundance of cultural plants that we can use for eating and I or medicinal, spiritual use. We have an abundance of fish and wildlife managed for spiritual, ceremonial, consumptive and recreational use.	

Forms of Production

We are a sovereign self-sufficient nation. We support our quality of life through sustainable profit from our natural resources and many other diversified income opportunities available to us. Profit is valued only to the extent that it supports our way of life, our traditions, culture and values. With an emphasis on taking only what we need, can use without waste and only what we can replace. We broaden understanding and awareness of our traditions, culture and language, in our communities, in our schools, and where we work. We utilize our tribal members (elders and others who know these things) to teach anyone interested in learning, especially our youth. We make the time and provide opportunities I infrastructures that foster and encourage more traditional I cultural activities, for example, harvest ceremonies, root digging, berry picking, gathering medicine plants, naming ceremonies, vision quests, sweat lodges and Chinook dances. We emphasize the importance of involving the membership in developing their communities, families coming together, interacting, developing cultural and spiritual foundations. Parents spending more time with their children, getting involved with their education, health and welfare. The Tribal Membership Colville Business Council, natural resource managers and employees, along with all the other Tribal and Bureau employees develop new ways to think about resources and people, produce opportunities for decision making through the Holistic Resource Management thought model, the consensus process and team building. Producing opportunities to nurture, honor, and respect each other. We derive revenues, sustenance, medicines, natural beauty, tranquility, harmony and well being from these forms of production.	We will support our quality of life through sustainable wealth from diverse income opportunities, without waste or sacrifice of tradition, culture and values, we will emphasize the importance of involving the membership in developing their communities; we will provide opportunities/infrastructure to increase understanding/awareness of our culture, traditions, language, sovereignty and history throughout our communities, schools and workplaces, continuously promoting honor, respect and diversity.

Future Resource Base:	
We are perceived as respectful, sincere, helpful and responsible to the needs of the Tribal Membership. We speak from our beaus. We serve rather than dictate. We are committed, hardworking, farsighted people, our actions are accountable, credible and trusted, protecting and improving our resource base. Management decisions will include protection of cultural and aesthetic values. **Future Landscape Description:** We have healthy, productive landscape including rangelands, croplands, forests, riparian areas, streams and lakes. There is biodiversity with complex plant, animal, insect and microbial communities. Resulting in an abundance of cultural, medicinal, and edible plants, clean air and water, springs and streams that flow year round, large trees, wildlife, fish and insects. There is an effective water, mineral, and energy cycle. Our soil is healthy and high quality providing high biological capability, and acts as an environmental filter creating the relationships between plant, animal and human health. Our reservation lands will look very much different than it does today, probably more like it did many generations ago. There will not be as many roads in our forests. Growth will be limited by allowing only developments that benefit the Colville Indian Reservation. We will manage with nature, as much as we can. The natural way is much cleaner, safer and self-sustaining. Utilization of alternative energy sources will be sought whenever possible.	We are and continue to be a self-sustaining sovereign entity; having flourishing enterprises; having healthy productive landscapes including rangelands, croplands, forests, riparian areas, streams and lakes; tribal decisions will include protection of tradition, culture, and aesthetic values; we will continue to provide improved/enhanced opportunities to communities/schools/workplace to increase understanding and awareness of our culture, values, traditions, language, sovereignty and history. The reservation remains as a rural life-style and the population is in balance with an effective water, mineral, and energy cycle with biodiversity resulting in an abundance of culture, medicinal and edible plants, clean air and water, springs and streams that flow year round, large trees, wildlife, fish and insects.

Table 3. Confederated Tribes of the Colville Reservation: Holistic Goal Development

Tribe's quality of life, financial well being, and ecological sustainability. The process of assessing the present situation can help people see how work in their disciplines relates to the overall holistic goal.

Assessing the present situation begins with looking at the status of three areas: social, economic, and ecological. Learning how the past was altered to create the present, leads to an understanding of the dynamics that have shaped current situation socially, economically, and ecologically. This assessment can provide clues about what needs to be done to move to desired future conditions (appendix B).

4.2.3.1 The Ecosystem

All planning work involving an ecological base needs to consider the impact of decisions on the ecosystem whole, for urban and suburban settings as well as for rural settings. In Holistic Management, this whole is defined through ecosystem foundation blocks, which include community dynamics, water cycle, mineral cycle, and energy flow. Each is assessed individually, but since there really exists only the whole ecosystem, it is important to understand the overlapping relationships of each foundation block to another. It is also important to remember humans are included, not separate or above. Without the life support system of our ecosystem, we would perish. These ideas are important to accept when planning and practicing holistic decision-making.

Because of the shortcomings in the present thinking about land management, it is important to put aside what one has been taught and really look for the clues of the land.

4.2.3.2 Brittle versus Non-brittle Environments

The concept of "brittleness" was developed by Allan Savory (Savory 1999) to describe how land responds to various ecological influences under intermittent or constant atmospheric

moisture. Brittle environments are characterized by an annual dry period and a possible annual moist period. This influences how carbon is cycled. The absence of or reduction of disturbance or overgrazing leads to a general deterioration of vegetation known as desertification. Non-brittle environments are characterized by yearlong elevated atmospheric moisture. Lack of disturbance allows these regions to rapidly move to a more complex ecology and higher serial stages because of rapid decomposition of organic matter. Brittleness is expressed on a scale of 1 to 10. One is used for extreme non-brittle environments, such as a rainforest in Costa Rica, and 10 is used for extreme brittle environments, such as the Sahara Desert. Parts of Hawaii and western Washington represent the extreme of a non-brittle environment while parts of Texas, New Mexico, and California represent the other extreme.

This concept is important for planners to understand and becomes even more critical as the environment becomes more brittle. Desertification has a lot to do with human activities on the land in brittle environments. If a planner is responsible for providing for the future water needs of a city such as Albuquerque, New Mexico, and the catchment is desertifying, the city is at great risk of not meeting future water needs *and* becoming susceptible to increasing flooding incidents, as the water cycle becomes more ineffective.

The author estimates the various regions of Colville Indian Reservation are between 4 and 7 on the brittleness scale. The south and west part of the reservation is drier with more seasonal moisture, and is very susceptible to desertification without adequate (and historic) disturbance. As one moves to the north and east of the reservation, annual precipitation increases, elevation increases, and there is generally adequate atmospheric moisture for decomposition to occur more rapidly, without the aid of disturbance.

4.2.3.3 Present Situation at the Tribe

4.2.3.3.1 Social Assessment

The quality of life at the beginning of this project was in many ways moving in an opposite direction from the desired future described in the holistic goal. As the Tribe's elders died, the three major language groups on the reservation were being lost, along with the associated culture and traditions. Before written language was introduced, elders were the Tribe's memory and historians. When writing was introduced through public education, the written word began to replace the elders' role. Young people were losing their respect for the value of the elders' role.

The status of health care, education, housing, and employment was also below the desires expressed in the holistic goal.

4.2.3.3.2 Economic Assessment

The author observed a high level of poverty by American standards among individual tribal members. However, an abundance of money passed through the tribal government. Redirecting funding could yield greater opportunities for the Tribe and allow more value for tribal members.

4.2.3.3.3 Ecosystem Assessment

The Tribe eventually developed new ways to understand the four *ecosystem foundation blocks* as they related to the Colville Indian Reservation. The Natural Resource Department used a GIS model adapted from the Ochocco National Forest to understand succession. The Forest had reconstructed a model of the land base from records dating back as far as land survey notes from 125 years ago, showing what the Forest looked like before current management. Also, they developed a flowchart to illustrate the various paths of succession possible for each habitat type.

They discovered five potential paths, each with five distinct successional stages. Which path the Forest followed depended on which "tool" was applied: fire, bugs, rest, and so on.

When they overlapped the land survey notes with habitat types, they had a clear picture of the "original" Forest, which had successfully sustained all the species. Next, they constructed the Forest of today based on habitat type successional stages. Then they overlaid the two snapshots in time and made many interesting observations.

The Tribe adopted those ideas and incorporated that thinking into GIS. The Tribe also went a step further and reconstructed the water cycle on the reservation, through modeling factors such as soil, topography, successional stages, and relief. Through this work, the Tribe was able to understand the changes over time and see what "tools" had fostered this change. The Tribe was then able to begin using appropriate tools to foster the desired outcomes. They also began considering the mineral cycle.

Community Dynamics / Succession

Community dynamics evaluates the level of complexity of species diversity at various periods on a given site. Succession is incorporated into community dynamics. There is evidence that biological complexity leads to ecological stability.

At the Tribe, the relevance of even-aged versus uneven-aged management in forestlands was also considered in the context of community dynamics. Even-aged stands, where trees are all about the same age, occur after catastrophic fire or clearcutting. Uneven-age stands, with trees of various ages, occur with selective logging. The elders felt the forest should not be clear-cut. Humans should not take all the trees, just as they traditionally do not take all the roots or salmon when harvesting those species.

The foresters argued that in the pre-historic days, periodic fire took all the trees in a stand replacement event. Diseases such as mistletoe and root rot could only be dealt with by removing all the trees and starting over, even changing species (such as from Douglas fir to Ponderosa pine). Foresters said that this was the only way to get lower serial species, such as Ponderosa pine, back on these sites. Even-aged management seemed to make economic sense in the short-run. Time is not wasted because care has to be taken with the "leave" trees during stand inventory and harvesting.

This conflict began to be resolved by using Savory's thought, "listen to the land; it will tell you more than people" (Savory 1999). An experimental forest was set up in the 1940s to study the long-term effects of fire and rest on forest stands. These stands compared burned-only sites to rested sites (where fire disturbance was removed). A fire was introduced to the site every 10 years and usually remained an understory burn. Ten years seemed to represent the average frequency of fire based on samples of tree stumps. This stand looked very much like the "park-like conditions" described by earlier writings and the elders. The dominant tree was Ponderosa pine. The rested site was a "doghair" thicket of trees, primarily Douglas and grand fir. A fire started in this site today would be a catastrophe. Most of the non-experimental stands at the same elevation looked like the rested experimental sites, unless recent logging had occurred.

Steve Arno (Barret, et al. 1997) studied old-growth remnants of Ponderosa pine in Montana. Only trees that predated the beginning of fire suppression work in the study area about 80 years ago were included. He found a broad age range existed in these stands and that Ponderosa pine thrived in "uneven-aged" conditions. He also found many pines over 500 years old, and one over 800 years old in these uneven-aged stands.

The grasslands faced different challenges relating to succession. Because soil conditions were not conducive to perennial grass regeneration, many bunchgrass rangelands had old plants, often with decadent centers, and no new seedlings or mid-aged plants. Any seedlings were generally "weed" species such as knapweed, and no organic matter was on the bare ground. Often, a cryptogrammic surface occurred between bunchgrass plants. The author observed similar challenges in bitterbrush stands, where the bitterbrush plants were over 80 years old, dating to about the time huge horse herds were removed from the reservation. The only place regeneration of bitterbrush occurred was on disturbed sites such as recent roadside cuts.

The old concept called "climax" is not relevant in the current understanding of succession. Climax denotes an "ending point." Late serial stages can look different under many regimes of management or lack of management. An ending point in a forest where fire has been actively prevented is different from the ending point in a forest that has periodic fire. Grassland with grazing animals removed will have a different "ending point" from grassland that still has grazing animals. The grassland's ending point is different if the grazing animals are migratory and stimulated by predators or are relatively stationary.

We could do a lot of management by altering succession on the reservation, primarily in the forestlands. As Aldo Leopold once said, "Game can be restored by the creative use of the same tools which have heretofore destroyed it — axe, plow, cow, fire, and gun. A favorable alignment of these forces sometimes came about in pioneer days by accident. The result was a temporary wealth of game far greater than the red man ever saw. Management is their purposeful and continuing alignment" (Leopold 1986). The chainsaw and possibly fire could significantly reverse successional trends on forestlands. With the grasslands, the focus would be on altering the water cycle.

Water Cycle

The water cycle refers to the effectiveness of water cycling in the ecosystem. The author prefers to use the term "catchment basin." "Watershed" denotes what we are witnessing on most of our watersheds today, a massive shedding of water. The Colville Indian Reservation has suffered extensive damage to its catchment areas from extensive road construction, overgrazing of riparian areas and landscape changes to forests and grasslands. Reducing new road construction in the forest and removing old roads and restoring them to original condition can improve the effectiveness of the water cycle. We developed a plan to quickly address forest health issues by using existing road systems to thin the stands of trees. However, much of the work to improve the effectiveness of the water cycle in forests is with altering succession.

With grasslands and croplands, covering soils and improving the organic matter in the soil can directly affect water cycle effectiveness. No-till and reduced-till cropping, green manure, crop rotations and cover crops keep the soil covered and improve the effectiveness of the water cycle. On grasslands, migrating ungulates can return organic matter to the soil surface through trampling and digesting vegetation. Hoofed ungulates can also break soil capped with cryptograms allowing water and air to more effectively penetrate the soil.

Mineral Cycle

Mineral cycle evaluates the effectiveness of minerals cycling. The mineral cycle can be made more effective by preventing loss of minerals offsite or by active cycling minerals such as carbon. Conditions suggested in the previous sections on modifying the water cycle and community dynamics also affect mineral cycle. Complexity of organisms can also influence the mineral cycle. Various species serve different roles. For instance, sagebrush acts as a "calcium pump" in the steppe region of the Palouse (Daubenmire 1968). Calcium is a leachable mineral,

so encouraging sagebrush allows calcium to be cycled through root intake and leaf fall, reducing potential loss of calcium off-site.

Energy Flow

Energy flow is the capture of solar energy on earth, primarily through photosynthesis, which is then transferred through the ecosystem until it is dissipated out of the earth's atmosphere. Energy flow is enhanced through the improved effectiveness of the water and mineral cycle and moving succession to more complexity. For land-based economies such as the Tribe, energy flow is important for generating wealth. Solar energy produced in green plants minus the cost to process that energy into a form consumed in the marketplace, yields profit. The question for land-based economies is "How do we optimize this storage and flow of energy?"

Energy flow is not a static number for any location in the ecosystem; it is a function of the effectiveness of the water and mineral cycles and stage of Succession. Another important question to ask is "how do we optimize the storage of energy through biomass on every acre of land?" Optimal energy flow and effective management of production costs yields "solar dollars," which is the wealth generated from solar energy.

Energy flow is affected by time, area, and volume. Time addresses when harvesting occurs and the plant's ability to recover the energy storage. Area is the surface area of the photosynthetic component of the plant and the efficiency of that plant. Volume is the mass of material available to harvest solar energy. Altering any one of these elements affects all the other areas. Altering any Ecosystem Foundation Block affects all the other Foundation Blocks.

Energy flow can be measured in terms of biomass stored per year. The BIA Forestry Department had estimated that 200 million board feet per year were produced under current management practices. Approximately 75 million board feet per year was transformed through

disease, insect, and fire. The remaining 125 million board feet was available for harvest or other

allocations such as producing an older forest. Only 55 million board feet was harvested. Other

limiting factors such as available moisture for growth caused insect outbreaks, and susceptibility

to catastrophic fire to increase as biomass increased. The forest in its present state was facing a

"forest health" crisis.

Energy flow in the grasslands showed a similar trend, with an abundance of grass at the end

of the dormant season. The "weak link" in both situations was the lack of ability to harvest more

energy from the land. We needed to address the question "How can we harvest more stored

biomass without damaging the watershed?" The better we can do this, the wealthier the Tribe

can become.

Leo Goebel (no relation to the author) and Bob Jackson of Enterprise, Oregon, are producing

five times the timber of the adjoining Forest Service land, equivalent to what is produced in the

Willamette National Forest, the highest-producing National Forest in the continental United

States. They practice selective harvesting in their Ponderosa pine-Douglas fir forest. They

began over twenty years ago with 19 million board feet on 160 acres, have harvested 22 million

board feet, and today, have 21 million board feet remaining on their land. One of their

management philosophies is to get the biggest return for dollar invested. For example, an inch

increase in the diameter of a 20-inch tree creates an exponentially greater volume of timber than

an inch increase of a 6-inch tree. By harvesting frequently, they keep the forest stand at an

optimal level of growth for the available sunlight and water. (Donovan 1999)

Harvest frequency and optimal growth also apply to energy flow on grassland and cropland.

Because grass follows a sigmoid growth curve and grasses of the Pacific Northwest evolved with

large ungulates and have low growing points, short grazing periods and significant rest periods

between grazing optimizes grass growth. Permaculture (Mollison 1990) and "do-nothing"

farming (Fukuoka 1985) also optimize energy flow on croplands, since profit is the difference

between income and costs of production.

4.2.4 Tools for Change

Once the present condition is understood and the desired future condition is clarified, the

next step is to look for deliberate actions that will move the entity from the present to the desired

future condition. In Holistic Management, these actions are called "Tools." They include

human creativity (which is key for clearly understanding the influences that can be used to move

from one condition to another) and money and labor (which is key for the ability to move in the

desired direction). The physical tools alter the ecosystem in the desired direction.

4.2.4.1 Human Creativity

The most powerful and important tool is human creativity. The survival of a species under

changing conditions is not based on fitness, but on adaptability, the ability to create something

new or rearranging the old in new ways. The human mind is adapted to solve problems. When

we are stressed, our minds work to find ways to reduce the stress. Stress often shows up first as

emotional tension, expressed as frustration or uneasiness. This can be transformed into creative

tension when we have the confidence to resolve the tension by looking for a solution. By

creating a clear mental picture of our present place and an outcome or goal we strongly desire,

we can stimulate this creative tension. If motivation is "belief" times "desire," a belief that

solutions can be found along with an intense desire will motivate creative behaviors.

4.2.4.1.1 Strategic Team

The purpose of the Strategic Team was to identify the weak link and develop creative strategies to address it, using the knowledge of a diverse group.

A Strategic Team is a small group that can focus on the big picture issues and interact comfortably. The group needs to be very diverse in natural resource disciplines and members can often be on opposite sides of issues. They also carry significant power within their respective program areas. The Strategic Team needs to be trained in Holistic Decision-Making. After defining the goal and developing the concept of the whole, this group is used to identify a Holistic Management concept called the "social weak link".

4.2.4.2 Money/Labor

How an organization allocates its time and money determines the results it gets. Since time and money are finite, the more effectively decisions are in relationship to the organization's holistic goal, the more efficient the system becomes.

4.2.4.3 Physical Land Altering Tools

The land altering tools, technology, fire, rest, and living organisms, allow us to physically alter the ecosystem. These tools are neutral, neither good nor bad. Fire can warm my home or burn my house down. How and whether a tool is used is determined by the holistic goal, which includes a description of the desired future landscape and social and economic values and conditions. Once tool combinations appropriate to the goal are determined, the tools can be applied. However, it is always assumed that the choice of tools for managing the ecosystem was incorrect, so appropriate monitoring is necessary to ensure successful attainment of the goal.

Often, people managing natural resources have a limited view and consider only a limited selection of tools. An analogy is someone who would take a hammer to the world, to drive nails

into wood *and* also try to use the hammer to paint the house. It is important to not remove any tools from one's "tool chest" through biased perspectives. An example is the widespread present application of the tool of "rest" in riparian areas by removing grazing livestock. Historically, grazing ungulates are a component of riparian areas, along with their associated predators, which prevented the "camping" of ungulates in riparian areas as is currently occurring with bison and elk in the Lamar River watershed of Yellowstone National Park. John Audubon writes in his diary from the Missouri River that the riparian area was literally decimated by the trampling of bison (Audubon 1940). This natural phenomenon occurred throughout the ecosystem and fostered complex and diverse communities. It is not the presence of the ungulate that causes riparian deterioration, but the timing of their presence. The human "management" of the ecosystem is the problem; the impact on the land is only an effect. Today's practice of removing livestock and fencing riparian exclusion areas does not move toward a holistic goal that includes healthy ecosystems *and* prosperous economies in brittle environments.

When assessing the use of tools, it is useful to think about how such tools tend to affect the ecosystem. Imagine tossing various sized pebbles into a pond and creates a tendency to observing the various resulting ripples. Questions such as "What are the tendencies of a tool on community dynamics, water cycle, mineral cycle and energy flow?" are very useful.

Brief descriptions of the Holistic Management tools and their appropriate use on the Colville Indian Reservation follow.

4.2.4.3.1 Rest

Rest is the deliberate removal by humans of disturbance to the ecosystem. Most people do not think of rest as a tool that is consciously applied. However, rest becomes a particularly

powerful tool if the ecosystem being managed is brittle, as previously mentioned because it has a tendency to lower succession in a brittle environment.

The reservation showed signs of being mid-range on the brittleness scale so the tool of rest would lower succession. Lower succession levels were not always desirable, particularly on the rangelands.

4.2.4.3.2 Fire

Fire was historically used a great deal on the reservation. It appears from evaluation of tree stumps that fires occurred as frequently as every 7 years in the lower Ponderosa pine forest and as little as every 300 years in the wetter, higher elevation stands. These latter fires were called stand replacement burns by foresters, as they tended to remove all the trees in the burned area. Such forests are dominated by Lodgepole pine.

Because fire was part of the culture, it was important to the tribal members to restore fire as a regularly used tool in forest management. We also found that after years of fire suppression (resting by deliberately removing disturbance), the forest had grown so many trees that during dry periods the trees were stressed, which led to tree mortality from insect and disease outbreaks. The use of the tool of rest in forests over many decades has caused great concern for forest health in the western United States. Fire could reduce the thickets of trees and foster a more open, park-like setting, as described in earlier accounts. This forest of old, with fire frequencies noted above, was more resistant to complete tree loss in lower-elevations. The author initiated an exploration of how to create "burnable forests" that could withstand fire and would be more resistant to health threats such as insects and disease. We looked at how to burn 35,000 acres per year on the reservation.

However, while this effort was going on, one must keep in mind that globally, carbon loading in our atmosphere is causing concerns about global climate change. Consequently, for the good of our whole earth, the Tribe would also need to find creative solutions for reducing carbon movement into the atmosphere in the future. For now, getting the forest "burnable" would reduce the danger of catastrophic fire with a total removal of trees and release of their stored carbon. In the long run, the Tribe would need to develop strategies for finding other ways to open the forest stands without releasing carbon. Wood is a good place to store carbon. How could we store more carbon on the earth rather than the atmosphere while shifting the successional stages of the forest to more desirable conditions? Logging, a tool of technology, could do this if done in ways that did not damage the water cycle. This would also potentially generate more revenue for the Tribe.

4.2.4.3.3 Technology

Technology includes all tools created by humans. These can be as simple as a nail or saw or as complex as an internal combustion engine or computer.

Technology was a primary tool used on the reservation. In forest management, we used chain saws, road building and transportation systems, mapping and analysis systems, and many other common tools. Particularly important was how we used technology to alter community dynamics, water cycle, and mineral cycle. On the rangelands, we used tools such as fencing, water development, and chemicals such as pesticides. Fencing was a problem on the reservation, as it violated the cultural value of preserving unrestricted lands. Consequently, we looked at other tools such as electronic ear tags and behavioral "placement" of animals (which is not a tool of technology, but creativity) as alternatives.

4.2.4.3.4 Living Organisms

Living organisms is the final tool in the tool chest. We can deliberately use living organisms to modify the ecosystem. Organisms like beavers (which can restore holding ponds in a riparian area), plants such as food crops, and beneficial insects used in Integrated Pest Management are examples. Savory adds grazing and animal impact as separate tools because of his emphasis on restoring desertifying lands (Savory 1999). However, grazing and animal impact are also a function of living organisms so the author includes them here under living organisms.

When applying living organisms, one must keep in mind that an organism does not exist in the ecosystem in isolation. The failing of Conservation Reserve Program plantings over time is an example of what happens when we do not introduce the whole community when reseeding cropland. If herding ungulates, predators, and microorganisms were part of the original whole ecosystem, those organisms need to be considered as well.

4.2.5 Testing Guidelines – Making Decisions

Testing guidelines are one of the most powerful components of the Holistic Management Model. These guidelines are critical for making effective decisions toward a holistic goal and for taking actions that are simultaneously socially, economically and ecologically sound. To use the testing guidelines, one first needs the holistic goal. When the holistic goal is developed, specific actions are tested, or measured, as to whether the action generally moves toward or away from the holistic goal. The following seven questions are the tests to be answered. With practice, these can be answered very quickly, within minutes and even seconds. (Figure 4, at the end of appendix C, shows an example of a completed testing form for the Natural Resource Department strategic plan).

4.2.5.1 Future Resource Base

> *If you take this action, will it lead toward, or away from, the future resource base described in your holistic goal?*

This question focuses on sustainability of the ecosystem and human interaction. The ecosystem is measured in terms of four foundation blocks — water cycle, mineral cycle, community dynamics (succession) and energy flow. Human interaction is measured by how significantly influencing stakeholders perceive the action.

4.2.5.2 Weak Link 1-2-3

> *1 — Social: If you take this action, will you encounter or create a blockage to progress?*
>
> *2 — Biological: Does this action address the weakest link in the life cycle of this organism?*
>
> *3 — Financial: Does this action strengthen the weakest link in the chain of production?*

These questions look at what social, financial, and biological limits are restricting progress toward the holistic goal. While you may identify the weak link for each category, the social weak link is always identified because there are human limitations when moving toward a holistic goal.

4.2.5.2.1 Social Weak Link

The social weak link is the blockage that is preventing steady movement toward a group's holistic goal. There are many social weak link possibilities including a lack of a clearly defined goal, lack of knowledge, poor self-esteem, inadequate skills to resolve conflicts and inadequate leadership skills.

4.2.5.3 Marginal Reaction

>*Which action provides the greatest return, in terms of your holistic goal, for the time and money spent?*

This test is looking for the "biggest bang for the buck." Understanding the weak link is important for this test, as an investment in an area that is not the weak link will result in low return for effort invested, compared to successfully addressing the weak link. This test compares two or more actions.

4.2.5.4 Cause and Effect

>*Does this action address the root cause of the problem?*

This question asks you to focus on addressing the problem rather than the symptom. Frequently, symptoms are treated as causes, and the action is not successful. If you can recognize the problem and pose solutions to resolve it, symptoms often take care of themselves.

4.2.5.5 Energy/Money Source and Use

>*Is the energy or money to be used in this action derived from the most appropriate source in terms of your holistic goal? Will the way in which the energy or money is to be used lead toward your holistic goal?*

This question has several components. The question is asking about the use of energy (renewable versus nonrenewable) and the use of wealth (generated from within or borrowed) to do the action. The question also asks about the pattern of use of the energy and wealth. Is the pattern of use consumptive (once used, it is gone), addictive (used up in the action and creates a dependency for continued use), cyclical (invested once and continues without further investment) or used to build infrastructure (builds a base)?

4.2.5.6 Gross Profit Analysis

>*Which enterprises contribute the most to covering the overheads of the business?*

This test is applicable when you are comparing two or more enterprises. Since this project is not considering enterprises, it is skipped in this analysis.

4.2.5.7 Society & Culture

How do you feel about this action now? Will it lead to the quality of life you desire? Will it adversely affect the lives of others?

These questions focus on the emotional perspective when testing actions and ask which action seems to be the "right thing" to do after having assessed the other attributes. This is a subjective assessment based on "feeling."

4.2.6 Management Guidelines – How to Implement Decisions

4.2.6.1 Flexibility: Three Levels of Planning

The three levels of planning in Holistic Management are strategic, tactical, and operational. Strategic planning focuses on fostering long-term outcomes (100+ years). Tactical planning addresses necessary planning during crisis and emergencies. Operational planning has an annual planning focus with details of day-to-day activities.

4.2.6.1.1 Strategic Level Planning

Several planning procedures address strategic level planning needs. Four of these are the development of a holistic goal, strategic planning, land planning, and estate planning.

Holistic Goal Development

The most important element of Holistic Management is fostering a goal that includes everything of critical importance to the community. As Savory said, community members should have a goal they will literally die for, because life would not be worth living if the goal

were not acted on. If such a goal is developed, with that kind of commitment and dedication, the rest of Holistic Management will fall into place on its own (Savory 1999).

Strategic Planning

Strategic planning is the bridge between the holistic goal and annual planning, done through the financial and biological planning processes.

This level of planning was used evaluate the details of strategies that would foster our holistic goal and gave us elements for measuring our progress. Appendix F illustrates an example of the strategic planning developed in the Natural Resource Department.

Land Planning

The land planning process starts by accepting the social, economic, and ecologic reality of the present situation. Then consider how you would start over with all human investment (towns, roads, dams, agriculture, industry, etc.) on the basic ecosystem base and, given what you expect to deal with 200 years into the future, design human investment to foster the holistic goal. In 200 years most human investment will deteriorate and will need to be replaced, rebuilt, or relocated. Then overlay the current situation with the desired outcome 200 years from now. The community can now ask, "When things wear out, or we invest in new infrastructure, how can we invest to most effectively make the transition from the present to the desired?" Strategies can then be developed to encourage investment that is consistent with the land plan.

Estate Planning

Estate planning is generally focused on families. However, government can also consider elements of estate planning through the financial planning process and strategic planning.

The Holistic Management Financial Planning process at the tribal level allowed reallocation of financial and time resources to the best investments for the Tribe. Land acquisition and education (investing in infrastructure) became top priorities and money continues to be invested to this end.

4.2.6.1.2 Tactical Level Planning

Often, emergencies and crises occur even with the best-laid plans. In the author's experience, the better the planning, the fewer the emergencies and the better the ability to cope or adapt to the new situation. We used a process developed at the Sand Hurst Military Academy (Savory 1999) to address emergency or crisis situations. The process, called a Simple Appreciation, has four steps: 1) clearly identify the *aim*, 2) identify all the relevant *factors* associated with the aim, 3) list all possible *courses* of action, and 4) make a *decision*.

This process was used at the Tribe to quickly address forest health by treating large areas of forestland using previously built roads and to buy time for developing a more complete plan to implement the Tribe's holistic goal. The forest-harvesting plan was designed to quickly thin dead and dying trees using existing roads, since new road construction cost money and time and often had a negative affect on the water cycle.

4.2.6.1.3 Operational Level Planning

Operational planning addresses day-to-day routines on an annual basis. We implemented two areas of operational planning, biological planning and financial planning.

Biological Planning

In biological planning, all variables known to participants of the process are assessed in relation to the ecosystem. As previously mentioned under the section Energy Flow, we can

influence three areas to increase energy flow: time, volume and area. Holistic Management

Grazing Planning can be modified to fit management of forests, riparian areas, and wildlife

management areas, and is then "biological planning" (Savory 1999, Bingham 1990). The

premise of biological planning is that the human mind's ability to see multiple variables is

limited. This process places *everything* known that is important to the management of a unit of

land on a planning chart, reducing conflicts between land uses and allowing planning to

proactively alter the ecosystem toward the desired landscape description.

Financial Planning

The ability to allocate time and money toward a desired outcome is powerful. The more

effective an organization is at doing this, the faster and more solid the movement toward the

desired outcomes. The financial planning process at the Tribe is described in detail in section

4.5. Practice: Holistic Management Financial Planning, below.

4.2.6.2 Organizational and Personal Development

There are many elements to consider in this management guideline and is essential to

successfully practicing Holistic Management. The cornerstone of organizational development

begins with possessing leadership qualities. The author spent years learning about what were the

patterns of effective leaders, then adopting those patterns within his own life. This is a critical

element of practicing Holistic Management.

An element of human dynamics the author did not consciously understand in the beginning

was the importance of shifting power at the Tribe. In natural resource management, the power

was with the nontribal-member "ologists," (i.e. biologists, hydrologists, foresters, etc.). Natural

resource planner positions required a college degree. No tribal members with natural resource

degrees were working at the Tribe. The nontribal-member planners called the shots, based on

their value system, hence the emphasis on clearcutting and other practices that violated

traditional values. The primary power base was BIA Forestry with the wildlife biologists a

distant second. The whole tribal system seemed to lack belief in tribal member capabilities, even

at the Council level. The author observed planning meetings where the non-tribal team members

sat in an inner circle and did all the talking while tribal members were not asked for their opinion

about things for their own reservation. Much of the author's work over the years at the Tribe

was designed to give the power to the people.

Strategies to transfer the power structure to the tribal membership included:

- Initiating the broad based training program at the grassroots level to build capacity and confidence.

- Meeting with elders, the informal power base of the Tribe, to ask their ideas.

- Helping the director of the department to be successful and working to unify federal and tribal natural resources department functions, the Tribe being the lead.

- Hiring an all-tribal IRMP team.

- Complying with the tribal resolution that said non-tribal-member managers needed to be replaced by a tribal member within two years.

- Using the consensus process helped people figure out how to work together better and resolve their own problems. The conflict resolution work fostered a sense of empowerment. Encouraging tribal leaders to get training in holistic decision-making and planning, and encouraging tribal members who had received the training to attain leadership positions.

- Working with program managers to create small successes. We went full bore into planning, beginning with understanding the Tribe's holistic goal, developing a purpose statement for the program, and setting five-year goals and annual objectives. We brainstormed objectives, ways to increase income and ways to reduce time and money costs. We tested each objective to determine if the action would move toward or away from the holistic goal to understand if it was the "right thing" to do. Every staff member was responsible for developing an action plan, determining who would carry out the plan, and developing a budget for at least one objective.

Another element for practicing Holistic Management is to develop self-esteem within the

organization. The author made a conscious decision to respect all people he worked with at the

Tribe, particularly tribal members. The concept of the self-fulfilling prophecy seems to affect

individual and organizational outcomes. What individuals and organizations tend to focus on

and believe tends to become their outcomes (Merton 1968). This is called the "Galatea effect"

and the "Pygmalion effect" from Greek mythology. The legend goes that a sculptor, Pygmalion,

from Cyprus carves and falls in love with a statue of a woman, which Aphrodite brought to life

as Galatea (Rosenthal 1973). The author used the "Pygmalion effect" with many tribal members

and employees and the Natural Resource Department and tribal government as a whole.

Creating small successes was a valuable strategy in getting this work to progress. It took two

years for the Natural Resource Department to complete the full strategic planning work

(Appendix C). The planning cycle almost got completed the first year, but things broke down in

the tribal budget process. The second year, the planning cycle did get completed, which included

developing a budget based on the holistic testing. The budget and plan was presented to Council.

The Natural Resource Department had treated 10,000 acres of forestland along with the other

workload for $17 million per year. After this new plan, the Department determined they could

realistically treat 20,000 acres of forestland and meet all other program needs, for $16 million, $1

million less, per year than the previous budget. That received very favorable attention from the

Council.

Another useful strategy was telling the story of the work beyond the Tribe. This information

exchange at conferences and tours created significant interest in the conceptual framework being

adopted by the Tribe. Consequently, requests for more information were coming to the Tribe,

especially to the Council. This increased their interest in knowing more about the work that was

being done and actively supporting the work both within and beyond the reservation boundaries.

Another valuable strategy was to spend quality time with individual Council members, listening to their needs and incorporating their concerns into the work being done.

The final strategy was to educate tribal members and employees. Significant resources were allocated for educational classes on Holistic Management, Total Quality Management, and other appropriate learning opportunities. Opportunities to exchange information through processes like the consensus building process were valuable. Additionally, tours, both on the reservation to understand the current situations and beyond the reservation to places that had a track record of successfully practicing Holistic Management, proved valuable. These tours were designed to show how people were breaking out of the box of conventional management techniques and getting the kinds of results the Tribe hoped to achieve.

4.2.7 Plan, Do, Check, Act — Shewhart Cycle

Holistic Management uses the phrase "Plan, monitor, control, replan" to indicate the iterative nature of the planning process. This does not clearly describe the intended behavior. Edward Deming's *Shewhart cycle,* the process he taught for continual improvement, more accurately described the process. Using the Shewhart cycle, you *plan* the action, implement or *do* the action, *check* the results to see if it moves you the direction intended, then *act* on what you learn. Then *check*, then *act*, then *check*.

Deming also stated, "What you measure *is* important!" Many organizations use measurements that do not reflect the real desired outcomes, which leads to behaviors inconsistent with those outcomes. It is very important to allow time to evaluate measurement and monitoring methods to ensure that they lead to the outcomes you want to achieve (Deming 1987).

4.3 Four Modes of Holistic Decision-Making

Holistic Management is practiced in four modes: management, research, diagnostic, and policy analysis (Savory 1999). These modes allow organizations to use the Holistic Management to think critically to develop solutions for achieving the holistic goal.

4.3.1 Management Mode

Since the work at the Tribe involved substantial resource management, the emphasis was on using management mode. This mode allows organizations to use the holistic decision-making process to foster the holistic goal. When practicing holistic decision-making in a management mode, one first defines the whole under management and develops the holistic goal. Next, one determines, implements, and evaluates actions based on the holistic goal.

4.3.2 Research Mode

Holistic decision-making is valuable when determining what needs to be learned to successfully make changes that move toward your holistic goal. In research mode, one begins with the "Weak Link" question. When addressing the ecosystem, you can ask "Where is the weak link in the life cycle of a problem or endangered organism?" Using holistic decision-making this way allows one to target learning specifically toward benefiting the community. The Tribe used this mode occasionally to find solutions to insect and disease outbreaks and weed infestations or increasing dwindling salmon populations.

4.3.3 Diagnostic Mode

Diagnostic mode is used to learn why a problem occurs and what to do about it. In this case, you begin with the "Cause and Effect" question. "Does this problem have natural causes or is it

caused by humans actions?" If humans cause the problem, then ask, "What is the root cause of the problem? Are we focusing on the root cause or merely symptoms of a greater cause?" The Tribe used this mode to address issues such as deteriorating forest health or a higher level of suicide and alcoholism.

4.3.4 Policy Analysis Mode

Policy analysis mode assesses policies for the soundness in moving a community toward its holistic goal in the past, present, and future. To analyze a policy this way, the policy analyst must first have a clear understanding of the holistic goal, then he or she scans the policies for consistency with the holistic goal. If policies are inconsistent with the goal, they can be modified to more effectively move the community toward its holistic goal.

The author used this process to initiate the movement to whole tribal Holistic Management Financial Planning by allowing the Council to compare the current budgeting policy with a policy that could be developed for Holistic Management Financial Planning. The comparison made clear the ineffectiveness of the current budget process and the need to adopt the holistic Management Financial Planning process. Using the policy analysis mode of Holistic Management can significantly reduce the number of policies and their length and create more effective policies.

4.4 Practice: Two Watershed Projects

When the author started at the Colville Reservation, two IRMP watershed projects, Six-Mile Springs and Owhi Flat, had already begun. Project teams had been selected and team leaders appointed. Bill Gardiner, a non-tribal member wildlife biologist, was the team leader for the Six-

Mile Springs IRMP and Lois Trevino, a tribal member water quality enforcement officer, was the Owhi Flat IRMP leader.

Six-mile Springs is located on the southwest side of the reservation, draining directly into the Columbia River. The population of tribal members is low; Inchellium is the closest town. It is primarily forested, with wildlife (elk and deer) use, some livestock grazing, and some cultural resource foraging and gathering. Owhi Flat is near the center of the reservation close to the Indian Agency and Nespelem. Owhi Flat is important for recreation, cultural foraging and gathering, wildlife, forest products, livestock grazing, and has a very important regional Eastern Brook Trout fishery.

The Tribe really needed a reservation-wide IRMP rather than one limited to the watershed level because the Tribe depended on a reliable and consistent source of revenue from timber harvested reservation wide. These two plans would regulate timber harvested in their respective watersheds, as well as addressing all other watershed resource planning. It would clearly be difficult to ensure consistent timber revenue for the whole reservation by planning separately for each watershed. In this case, an important "economic-shed" was not being considered at the IRMP planning level. Organizations need to manage their "management-shed" level; the management whole the planning organization is responsible for. An organization can ask, "How can we enhance the "salmon-shed," realizing it is beyond the jurisdiction of almost every party. A planning organization operating at a watershed level, however, can define the whole under management, develop a holistic goal for the "salmon-shed," diagnose the problem, and develop strategies and actions that will foster the holistic goal.

Because the two watershed IRMP teams were responsible for tribal natural resource management, they needed to look at the whole management-shed to determine all the relevant

perspectives in planning for the whole, hence the need for a reservation wide IRMP. However, since the IRMP watersheds were already in place, they provided a practice ground for an eventual, more extensive IRMP covering the whole Tribe. For now, the teams could begin using holistic decision-making in designing the watershed plans. We began by defining the whole for both watersheds, and then developed a holistic goal for the watersheds.

4.4.1 Six-Mile Springs

Before developing a holistic goal for Six-Mile Springs, Mr. Gardiner, the team leader set up a tour of the watershed.   Ten elders from Inchellium, one younger tribal woman, and three non-tribal staff members, Mr. Gardiner, the author, and a forest engineer participated. The staff's job was to remain quiet and listen for most of the day. As the group toured the area, participants, particularly the elders, talked about the watershed's past.   When asked how they felt about the current management of the forests on the reservation, the elders expressed sadness and disappointment in how the reservation's natural resources were being managed, their assessment of a deteriorating reservation, and disgrace at what they were going to pass on to their grandchildren.

Then, when asked what the reservation natural resources, in particular this watershed, should look like for them to have pride in what was being left for their grandchildren, they described a vision of a more hopeful future. The elder's description of a more positive future became the basis for the holistic goal for the Six-Mile Springs watershed plan. Under Mr. Gardiner's leadership, the Six-Mile Springs watershed team generated many creative ideas for fostering a holistic goal, including using GIS in the planning work. The team borrowed ideas from work in Ochocco National Forest while researching succession and community dynamics. Holistic Management Grazing Planning, developed by Allan Savory and the Center for Holistic

Management (Bingham 1990), was modified to become a Biological Planning process for managing forest, wildlife, cultural, and recreational resources.

4.4.2 Owhi Flat

Owhi Flat was more complex and developing a holistic goal took longer than for Six-Mile Spring. Owhi Flat was widely used by the tribal members, so the planning team held several public meetings across the reservation to provide an opportunity for many people to participate in the goal setting. At first, meeting participants had difficulty believing that the team wanted to develop a goal written by the tribal members before beginning planning. This may be the result of public cynicism developed from attending meetings held for "public input" after the planning agency already has plans in place.

The tribal members who attended the IRMP watershed team's public meetings were expecting to be presented with a completed plan to comment on. Finally, when the team repeated that they would set the planning goals and develop a plan only *after* clearly understanding tribal member's desires, meeting participants began to believe.

At first, participants were only able to say what they did not want: no cattle, no clearcuts, and no herbicides. These types of tools are not included in a holistic goal, unless they reflect a value. Holistic goals are stated in positive terms, including only what the goal developers desire rather than what they want to avoid. Including tools in the goal would limit possible ways of solving the underlying causes.

When the planning team helped participants rephrase their desires in positive language, a clear picture emerged. The team learned they wanted clean water, they wanted mother earth to be respected, and they wanted safe foods like roots, berries, and deer. Other important desires

included producing jobs and the ability to express cultural beliefs. The goals expressed by meeting participants formed the basis for the Owhi Flat IRMP team's work.

4.4.3 The IRMP Teams

4.4.3.1 Team Member Education and Development

The success of these watershed projects required a skilled team. As mentioned previously, team members were skilled in their individual disciplines, but did not necessarily have all the other skills and knowledge required for the holistic planning process. The author initiated several additional elements to foster the success of the IRMP process, including education and training, team-building to increase trust and acceptance, fostering creativity, making decisions holistically, and monitoring progress and results.

Training courses included the Introduction to Holistic Management, Leadership Seminar, Total Quality Management, Consensus Building, Diversity Awareness, and Generating Wealth.

Team-building exercises included sessions led by the author based on the traditional Hawaiian concept of restoring family goodwill called Ho'oponopono. Participation in a ropes course on the reservation, expanding the summer intern program with more youth activities, and doing presentations for organizations such as the World Bank and the National Resource Conservation Service also contributed to team building and skill development.

By bringing positive attention to others who did things differently (showing the value of diversity), and by improving the quality of listening and exchanging information, the author endeavored to create opportunities for expanding creativity.

4.4.3.2 Expanding the Base

In addition to the two watershed teams, several other groups were formed, including a Holistic Management-learning group (an outgrowth of the Holistic Management training at the Tribe); two Total Quality management groups, a Leadership Team and a TQM Council, and BIA Destiny 2000 Planning, a national-level quality improvement program. Working with these groups helped support better decision-making and progress monitoring. Several of these programs were initiated independently of the author's work, but provided additional opportunities to enhance the process.

The author also worked within the Fish and Wildlife Department to develop a "model team". This required team building, developing a mission, goal, objectives and a budget to support, and implementing a quality customer service component. This demonstrated to people what could be done as part of holistic planning. An important strategy when introducing new processes is to create small successes, which will grow if the value is clearly seen.

We also established an IRMP Advisory Group, a team of IRMP project leaders who managed a growing number of IRMP projects, including the two watershed projects.

4.4.3.3 Overcoming Obstacles

Implementing effective decision-making in the IRMP watershed projects was not easy and sometimes progress was slow. Some of the obstacles to progress listed by the strategic team and IRMP project leaders included:

- A lack of leadership and management commitment and skills at various levels. Based on the holistic goal and testing, this seemed like the "social weak link." Management did not place a high priority on IRMP, so it did not get full-time attention from staff and necessary resources were not always allocated.

- No long-term planning process to optimize tribal resources. This is why the author encouraged the strategic planning process.

- No clearly defined goals that department management and staff (as well as the Council) could commit to.

- Lack of knowledge about how to create a sustaining management basis for the reservation.

- Too much time and money was required for the current IRMP process, and it did not achieve the desired goals. The holistic planning process described here was designed to address this, but required more training.

- Some managers in the department did not trust staff.

Most of these obstacles were overcome by following the Holistic Management Model described in this paper.

4.4.4 Watershed Project Results

The completed Six-Mile Springs project plan was presented to the elders and community, and they were asked if it would create the results they initially asked the planning team to do while on the first watershed tour. The plan actually brought tears to the eyes of some of the elders, because they felt that government had never listened to them before and now they saw hope and felt their views were respected. When the Six-Mile Springs plan was implemented, 50% more timber was harvested than the foresters had thought they could harvest. Only seven miles of new road were built, compared to the 21 miles the foresters had originally estimated. Burning was restored to the forest, and 4500 acres were burned in the fall after a very dry summer. The cost of burning was only $29 per acre, less than the $75 we budgeted and far less that Forest Service estimates of $125 (with more realistic figures of over $300 per acre).

Much of this success was due to the use of geographic information systems (GIS), a way to process and analyze data spatially, which allowed us to incorporate the values and goals of the elders and different disciplines to create a plan that worked. The plan was passed unanimously in Council, another achievement.

Similar results occurred with the Owhi Flat plan and though it was behind schedule, we were able to capitalize on the lessons learned in Six-Mile to further enhance our work in Owhi Flat. GIS became even more integral to the process. Managing vegetation to foster cultural plants such as wild carrots and huckleberries received more emphasis. Large pines and Douglas fir were left in stands that would earlier have become clearcuts. The team worked with the rancher to reduce the pressure of livestock on the riparian areas at critical times.

After presenting the completed plan back to the membership to ensure that it would meet their future desires, it also received a unanimous vote of support in Council.

4.5 Practice: Holistic Management Financial Planning

Holistic Management Financial Planning, a process for allocating time and money toward the future, has eight basic steps: plan the planning, plan the income, plan the profit, plan the expenses, analyze and assess the plan, do the plan, check the results, and act to correct the plan.

Prior to the work described here, no government had used Holistic Management Financial Planning. The work in the Tribe's natural resource department was the previous largest scale application the author is aware of. Allan Savory taught a policy analysis course in December, 1995, and the author taught financial planning in January, 1996. The Council also adopted the holistic goal (figure 2) in January.

4.5.1 Planning the Plan

Work on financial planning began with the development of a month-by-month plan to begin in February and culminate in June. The core planning team was made up of administrators, program managers, and budget staff. In February we started by "planning the plan," using the consensus building process to address concerns about the process and identify best possible

outcome for this work. Best possible outcomes included passing the budget three months early by a unanimous Council vote, reducing tribal spending to 5% below projected income, cutting no jobs or salaries, and protecting some politically important programs. Planning the plan was concluded by determining what work would be required over the next four months and deciding when to do it, who would do each task, and how the tasks would be carried out.

4.5.2 Planning the Income

Work started in March by developing a worst-case estimate of the Tribe's income for the following fiscal year, which was $47 million. Allowing for the 5% "profit," our projected budget was $43 million. The remaining 5% could be invested in doing actions yielding positive long-term benefits for the Tribe such as investing in education, land acquisition, and building financial reserves. Tribal Enterprises, which is non-governmental, was also included in the planning.

The planning team learned that many grants that provided funding for the Tribe supported programs that were not always consistent with the holistic goal. Often, programs went after money for the sake of the money, not thinking about the full consequences to the Tribe. Grant-funded programs and projects that were not consistent with the holistic goal were identified and funders were approached about modifying, or even canceling, the contract. Any contracts that could not be modified would be fulfilled but not renewed. Several funders, such as EPA, supported the change. Based on this work, EPA now incorporates a holistic approach in requests for proposals.

4.5.3 Planning the Expenses

Expenses were planned April and May. Administrators, program managers, and budget staff from each program area developed clear purpose statements for their program, tested that purpose toward the holistic goal, then determine program objectives for the coming year. They were to then allocate dollars to the objective and develop a program expense budget. Over 250 government programs were tested. Some of the lessons learned during testing included:

- Planning should proceed from the holistic goal downward, not from the bottom up (in developing program purposes, strategic plans, and actions). A simple analogy is if a pilot flew a plane from an airstrip without thinking of the destination first. As the pilot got airborne, started flying, and after a while realized the destination was actually north and all the time had been heading southeast, valuable resources of time and fuel had been expended. Perhaps to the extent that there was no hope of now reaching the destination.

- Tribal organization is fragmented, with a lot of duplicated services. This is an opportunity for saving resources by using a process to open up the territorial boundaries of programs and departments as Deming (1986) illustrates in his work.

- External funding needs to be reviewed. Some sources of revenues do not lead toward the holistic goal. Contract/Grant scopes of work may need to be rewritten. Some funders changed, some did not so either the Tribe fulfilled the obligations of the contract or returned the funds. Not asking these questions had been damaging to the integrity of the Tribe.

- Treating symptoms rather than the root causes of problems was the focus of 80% of government programs. Being aware of this allows action to be taken to work on strategies to resolve the conflict of treating symptoms rather than underlying causes. Senge and Savory talk extensively about this challenge (Senge 1990, Savory 1999). An example of some

refocused resource allocation to resolve this issue was with the game wardens. They realized that they had to patrol a very large reservation with roads in poor conditions and limited staff, and the cause of the problem was that people violated game regulations for various reasons. To address this issue, they reallocated 40 % of their financial resources and time to work with community education and involvement to resolve the poaching problem.

- When program strategies and actions fail in testing, they should be checked to see if these strategies or actions are addressing symptoms. The reason for this challenge was semantics. "Failure is viewed as a negative result. However, in the holistic testing, failure means there is a great likelihood the action will not guide the organization toward the holistic goal. This creates a "red flag" to take notice and be creative in coming up with other solutions or to be willing to accept the consequences and make necessary changes later. Other words could replace pass and fail, such as the question, "will the action move toward or away from the holistic goal?"

- Program staff was generally objective in testing. This was an impressive outcome to observe and created a high level of trust and credibility in the testing process. Holistic testing also significantly reduced levels of conflict over budget development.

- Staff and the Council need help writing strategic plans and actions and testing programs and actions. Training and education can speed up the process and improve quality if there was more understanding. These are basic points of Deming (1986).

- Enterprises were difficult to test due to the profit motive; where does this fit into the goal? The Holistic Management Model is actually very effective with business, particularly with the gross profit analysis and marginal reaction testing questions and the Holistic Management Financial Planning process; however, in this case the holistic goal did not include profit.

- The process provided much information about the programs and activities of the Tribe. The holistic testing provided an excellent opportunity to understand the complexity of the tribal government and how each program related to the larger perspective of operations and that relationship to a holistic goal.

- Only a small group participated in testing. More testing may be beneficial *and* necessary. Given the previous learning, expanding the numbers of people involved in the testing process could significantly increase the awareness of the tribal government's relationship to the holistic goal and the consistency of daily activity toward the holistic goal.

- Goals being tested did not always reflect how things really operate. This learning indicated the inconsistency between the stated goal and current actions, providing an opportunity to create a better alignment between the organization's stated purpose and actions.

- A good monitoring process is needed. This was a major failing of the process after the author moved away from the direct leadership of this Holistic Management process at the Tribe. This important step was highlighted in the author's recommendations, but was not carried forward after his involvement ended.

- Some entities, such as the Council, Per capita, Tribal Gatherings, and Emergency Funds did not have written goals. Clarity of the purpose of various entities can help in determining appropriateness of actions (Deming 1986).

- Most programs failed to address the weak link (understanding and education). Deming (1986), Savory (1999), and Senge (1990) address this point in detail.

- Human service programs can be tested. Often, Holistic Management is seen as a range management or natural resource process. The process of developing a holistic goal and doing holistic testing allowed participants to realize a much broader application. The group

was also willing to adapt the Holistic Management process to fit the tribal government, without losing the underlying assumptions of the holistic decision-making process.

Participants in the financial planning process learned that subjectivity could be removed from budget decisions and people would take an honest look at what needed to stay or go, even if it was their own program. Also, because we treated every program the same, programs did not compete with each other for resources. When we found that some programs, such as the communication program (*Tribal Tribune*), actually needed twice the funding, several programs took even deeper cuts for the good of the Tribe. The holistic goal became real through the realization that money not squandered today could be available for the Tribe and children of tomorrow, resulting in everyone making a commitment to the process.

Since the Tribe was a government entity, creativity was required to overcome obstacles. Tribally generated money could be saved; however, federal funds had to be spent each budget year. While it may be in the best interest of taxpayers to return unspent money, it was best for the Tribe to get and spend as much federal funds as they could, rather than spending the tribal dollars that could be saved. So, a list of needed items that could be legitimately purchased with the federal funds if money was left at the end of the year was devised. Programs would also be rewarded for returning tribal money at the end of the year; 75% of surplus funds would go to the tribal coffers and 25% would go into a program's discretionary fund, to be used for any purposes, with no strings attached, as long as it was legal. This kind of creativity was used throughout this process.

4.5.4 Planning the Profit

At the end of May, expenses were compared with income. Expenses were 5% over, not under, the target. By then it was only three weeks until Council elections, which would throw

out all the planning, as the new Council would have its own agenda. To further complicate things, Council members had stopped participating after the first month of planning.

Planning meetings always started with the consensus building process. Usually, people thought this was a waste of time. This time, when everyone was disappointed about being over budget, the group broke into small circles. Each group developed a list of all the reasons it was impossible to attain the best possible outcomes. The groups listed five pages of reasons. The groups then answered the question, "given that it's impossible to attain our best possible outcomes, if it were possible, what would you do?" This question stimulated a great deal of creative thought and, within two hours, they had developed a superb action plan.

Within three weeks, the middle of June, the expense budget had been reduced to 8% below income, $39 million, without any job losses or salary cuts. The group plan for presenting the budget to the Council that included a reading of the holistic goal in Salish by young people who had been taught by elders. Council passed the budget, at the reduced level, unanimously, the week before elections and three months before it was due. The budget was celebrated with a potluck, which, according to a former CEO for the Tribe, was the first time a budget process ended in a celebration. The passage of the budget concluded the author's contract with the Tribe. A tribal team, which had been allocated $100,000 for training from the Center for Holistic Management, would pick up where the contract left off.

4.5.5 Implementing the Plan

The planning process included was writing recommendations for the coming year and developing a plan for the money saved. The planning team was directed to determine how best to use this "profit." The team had identified over 700 "unmet needs," which had not been funded before but were necessary for the Tribe's success. All of these were tested and prioritized and

money was allocated. Money for reserves was top priority and 25% of the $8 million savings was allocated to a reserve fund. Acquisition of additional land within the reservation was next, with 20%, then education of tribal members, also 20%, and followed by numerous other important and tested actions. Unfortunately, tribal members did not trust their government and wanted a vote on how to spend the money. When a vote was held, tribal members voted 43% to 35% to pocket the money individually, rather than investing it as the team recommended. This was a surprisingly narrow defeat, given the history of distrust for tribal government.

The plan also included a recommendation that the budget be monitored monthly. That was not done and spending got out of hand. The author now believes that he should have asked for an extension of the contract to work with tribal leaders, including Council and Administration, on budget implementation and monitoring.

The new team led the next financial planning cycle, but they went by "the Savory book" instead of modifying Savory's model to fit the Tribe. It also began to appear that the team had more power over allocating money than the Council. To equalize this perceived imbalance, the Council voted to disband the team, though team members still ended up with jobs. Some *positive* results include one team member being voted into Council and becoming Tribal Chairwoman. She is now serving her third term. The Tribe was also recognized as a "New Founder of the Northwest" award recipient for 1997 by Sustainable Northwest (Sustainable Northwest 1998).

CHAPTER 5. CONCLUSION

This chapter reports the findings based on the objectives as outlined in Chapter 1. The practice of Holistic Management at the Colville Indian Reservation was a success during the time of the author's direct involvement. Evidence of this process's success includes the Tribe successfully shifting power to tribal members, especially honoring the elders. Over 700 tribal members (10% of the tribal membership) actively participated the formation of a holistic goal that was adopted with unanimous Council support as the Tribe's holistic goal. The elders have since recorded the reservation's three languages onto computers and it is now being taught in the public and tribal school systems. One watershed plan increased the timber harvest by 50% while reducing new road construction by 67% and reducing costs of burning by 61%. The Tribal government, with unanimous support of the Council, used creative means to reduce its operating budget by 17% without losing any jobs or cutting salaries.

Two challenges were how to continue the momentum of the process beyond the author's involvement and how to effectively transfer the skills to new leaders while maintaining the success.

Lois Trevino, the watershed project team leader, and later a member of the Holistic Management team, summarized the accomplishments:

> There has been a tremendous amount of learning.… There is no other bureaucracy that's doing what we are doing. Everybody stands to benefit whether you are Indian or not. You stand to benefit from the learnings that have taken place on the Colville Reservation.

> It's [Holistic Management at the Tribe] not a disaster, it is not a failure. There are successes. They are painful successes, but nonetheless they are successes. I don't want that to be overlooked. Because whatever happens to myself as a holistic educator with the Colville Tribe does not take away what anybody has internalized. You can't take away what is in a person's mind or what is within a

person's heart. I think that the evidence that we have made those impacts is there. I think probably true empowerment is that that comes out of my fellow tribal members and where it goes from there, that's the exciting part. (Francis 1999)

5.1 Literature Review

Research Objective 1. To review literature in the fields of effective decision making, systems thinking and sustainability, and the human elements of behavioral change, power, conflict and consensus, and community; identifying what others are doing and where gaps exist in current practices.

The literature described in Chapter 2 illustrates benefits of incorporating multiple

perspectives and approaches on these topics and pulling them together into a coherent whole.

5.2 Develop a Model

Research Objective 2. To develop a model for integrating the three elements of natural resource management, systematic decision-making, and consensus building, based on actual practice in the field.

The case study illustrates how these various ideas were used, tested, and refined to

compliment each other in a specific context. The result is a refined Holistic Management model

that is more effective than the original in serving a wide range of people in the planning process.

5.3 Recommendations

Research Objective 3. To develop a set of recommendations on how to apply this model in other situations.

Planners who would like to apply the Holistic Management Model to a planning situation

should:

- Possess leadership skills, realize their own personal power and use it to do good and serve their constituency.

  The author did not realize until far into the work the Tribe the difference between "personal power" and "positional power." The author had gained significant personal power at the Tribe. Council members, supervisors, parents, teachers, and administrators, based on their

positions, hold power granted by society. While the author had no staff or budget and little or no positional power, the ability to see a better future and risk taking action to make it happen allowed him to make a difference and influence many people at the Tribe, regionally, and nationally. Many planners working with governments are in similar positions and could apply the same principles.

- Involve representatives from all stakeholder groups in developing a holistic goal. A base value-set of economic and ecological sustainability, with social well being as defined by the community, is built into holistic decision-making. Community values are found within the holistic goal.

  In the case study described, the stakeholders were involved in developing a holistic goal that was heart-felt to the level that many who saw the goal for their first time began to cry as they read the words. They realized a vision of an unspoken dream, which was finally captured in the holistic goal, and the belief to make it happen. This holistic goal created the opportunity for clear action by those involved. The power of the holistic goal was ultimately realized when time and money was allocated toward actions consistent with the holistic goal for 250 government programs and 1500 employees with a $47 million budget.

  When the author handed the lead role for practicing Holistic Management off to the newly trained tribal team, the Tribe had changed. There was a greater sense of respect among previously distrustful groups. There was a spirit of community with a commitment to creating the best possible outcomes for the Tribe's future. Cooperation, respectful listening, sound decision-making, and a highly developed government in holistic decision-making existed at the Tribe. The spirit of the holistic goal was manifested in daily life.

- Use the consensus process to develop listening and respect. This work leads to new perspectives and insights, leading to the possibility of achieving more desired outcomes.

  The case study shows how the Holistic Management Model provided a framework for making decisions that allowed all stakeholders to be heard. People mattered. There was a process to handle the logistics of working with varying sizes of stakeholder groups.

- Address cultural issues such as racism and stereotypes and self-esteem (their own and other participants').

  The author observed when working with the Colville tribal members that the concept of holistic decision-making is an inherent part of their cultural beliefs, as taught by the elders. This made the work much easier once the elders understood English terms like holism and consensus building. Initially, semantics and jargon were an issue. However, once those issues were overcome, the elders took an active role in promoting holistic decision-making.

  Racism and stereotypes was another challenge this work faced. The author personally struggled with this issue for about eighteen months. Racism was demonstrated from whites to Indians, but also from Indians to whites and from Indians to Indians. This issue is tied to the bigger issue of developing a strong cultural self-esteem. Another related issue is the stereotype placed from people outside the reservation boundaries toward tribes. Helping

diverse communities overcome their fears of the unknown and respect the richness diversity adds to those communities is an important lesson for people worldwide.

- Make the Holistic Management process fit the organization instead of trying to make the organization fit the Holistic Management process. When bringing new ideas from outside of an organization, it is important to allow the organization to adapt the process to their own cultural ways of doing things, rather than making the organization rigidly fit the new process.

  In the author's assessment, the downturn in the practice of Holistic Management occurred because the new team used Holistic Management, as taught be Savory, too literally and did not make Holistic Management fit the Tribe.

- Train people to plan for, facilitate, and accommodate the need for ongoing learner adaptability. The Tribe invested heavily in training and education. The author realized how important leadership develop was in his personal development to enable him to do the work at the Tribe. Leadership ability must not be taken lightly in developing effective processes.

- Be aware of how the planning process and results may modify the current power base and address any changes or perceived threats to the power base.

  At the Tribe, the team lost support of the Council a year after the author handed the leadership role over to the tribal team. In addition to the failure to adapt holistic Management to fit the tribal culture, another possible reason for this down turn was that the team began to appear more powerful than the new Council. This resulted in a power equalizing behavior initiated by the Council, which was to cut the team's funding and disband the team.

- Continue the quality improvement process of planning, doing, checking, and acting and recognize the need for ongoing follow-up as part of the quality improvement process.

  First, do an assessment of what is the present situation, then use the Shewhart cycle, beginning with the *check* stage, and progress to *act*, *plan*, *do* then *check* again. Is the organization creating the future it desires? If not, what modifications to the current actions will get it on track?

  At the Tribe, the work was successful during the author's direct involvement but the process was not always easy and required constant learning and adapting to find ways to be more effective

- Build in ways to sustain the process.

  Some people within and outside the Tribe felt like the work ended in failure after the author left. However, significant effects remain. For example, the Tribe has worked with elders to preserve and translate material from all three-language groups, school children are now learning the language and the culture, and respect for the traditional ways is growing. Assessment of other changes that have occurred since the author left is beyond the scope of the present paper, but would be a good topic for further study.

- Look for people and organizations that are successfully getting the results you want and emulate their actions, adapting them to fit your situation.

5.4 Further Study

Research Objective 4. To provide recommendations for further study.

Additional research questions are:

- What is the current situation with the Tribe and what are the lasting effects of the work described in this case study? This requires long-term follow-up with Tribe

- How does the model described in this case study work in other situations? This requires testing the model in other contexts, such as with other Tribes; in urban settings; and in local, state, and federal government settings. Many governments at the local, regional, or national level can incorporate these principles to create a broad base of support in the pursuit of a sustaining future while successfully addressing short-term needs. This process could also be used to address global issues.

  The author is currently involved with a two-year old project in Mali, West Africa, which uses these principles, and is potentially set to reverse desertification, increase food production (with early results showing a 78% increase in production), and eliminate violent conflict (Goebel, et al. 2001). This process can change organizations by focusing on holistic, rather than reductionist, approaches.

- How can the process continue when leadership changes? How does the knowledge and skill effectively get passed from the initiator to a new team? What is the most effective way to learn the leadership and process skills needed to create successful results? The need to ensure continuity was a significant learning of this study. This requires testing ways to hand over power and train new leaders.

5.5 Summary

The planning process described in the case study can prove successful in its application for use with government. The Modified Holistic Management Model is a useful tool to aid holistic decision-making in governments of any size or orientation. There are some refinements to be made, including: follow up to learn what Holistic Management processes actually remain intact at the Tribe, continue to follow through with the Shewhart Cycle and, learn how to effectively

pass the knowledge and skill from one person to the next. If one does not like the results they are getting, do something different.

To conclude, using the airplane innovation story from the beginning of the thesis, the work at the Colville Tribe could be analogous to the development of the Boeing 247. Many technologies were perfected for practicing Holistic Management in a government setting; however, some key technologies require additional development to make this work successfully for governments, as described in the needs for further study section above. These new technological adaptations may be occurring now in the previously mentioned work in West Africa.

GLOSSARY

Brittleness scale: A continuum of ecological conditions that reflect how effective the decay process is at a site-specific under natural conditions.

Framework: A fundamental structure, as for a written work or system of ideas.

Holistic: Emphasizing the importance of the whole and the interdependence of its parts—the soil, air, water, climate, flora and fauna, people, and all other elements. Often the idea that the whole is greater than the sum of the parts is used to describe the concept of holism. The term has been a barrier to communication because it has prevented wider adoption of the concepts due to its various connotations.

Holistic decision-making: A goal-driven process used to simultaneously make sound social, economic, and ecological decisions.

Holistic resource management (HRM): Earlier term for Holistic Management.

Holism: A theory that the universe and especially living nature is correctly seen in terms of interacting wholes (as of living organisms) that are more than the mere sum of elementary particles. (*Webster's New Collegiate Dictionary).*

Integrated Resource Management Planning (IRMP): A process where many resource managers join together to identify and achieve common goals through consensus decision making relating to natural resources and the ecosystem.

Model: A systematic description of a system, theory or phenomenon that accounts for its known or inferred properties and may be used for further study of its characteristics.

Practice: To perform or work at repeatedly so as to become proficient.

Three-part goal: The earlier title for a holistic goal.

Total quality management (TQM): A management process to allow businesses and organizations to foster continually improving quality.

Visioning: A process for developing a long-term vision or holistic goal.

Whole under management: A description of the land area under management and all the affected people and financial resources.

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APPENDICES

APPENDIX A. STORY OF THE SHIELD

The shield is a symbolic adaptation of the Holistic Resource Management Model developed by Allan Savory. It was adapted in 1993 by the Indian People of the Colville Confederated Tribes of north central Washington State. The shield is a powerfully symbolic model designed to be used to organize human thought and as an aid in decision-making.

The model is shaped in the form of a circle. The "Circle of Life" is a core philosophy of the Indian people. The circle symbolizes the inter-connectedness of all things. This philosophy stresses the importance of human decision making so that we recognize that everything we do influences all other things and that the "whole" influences us. This knowledge commands a sense of respect for "all our relations" and a reverence for the whole "The Circle of Life"

At the center of the shield are the "whole" to be managed; the people and their values, the land, and the financial resources. From this center, the next ring contains the goal of the tribe; it is expressed in the quality of life desired, the forms of production to support that quality of life and finally the land and resource base necessary to sustain the Tribe far into the future. This ring is continuous; it has no beginning and no end. The next circle symbolizes the ecosystem, the circle that supports all life. The ecosystem is divided into the four directions; the water cycle, community dynamics or the living resources, energy flow represents the sun, the source of all new wealth, and finally the mineral cycle.

The ecosystem and the Tribe's goal are protected by seven testing guidelines whose duty is to guard against unwise use of tools that influence the ecosystem. The tools are found in the outer ring of the model. These testing guidelines ensure that all decisions made will be socially, financially and ecologically sound. Any use of tools must be carefully thought out and planned. Actions and results must be monitored for the earliest signs of deviation from the plan and

corrective actions taken when problems develop. New plans will need to be made to ensure

continuous progress toward the goal.

The feathers symbolize management guidelines or powers. If the user of the model possesses

the knowledge contained in each feather, power will be gained and that knowledge will speed the

user toward the goal at the center of the model.

PERMISSION TO USE THE SHIELD
The shield was designed as an educational and management tool to help us improve human decision-making and allow us to create a better world. A world where "All Our Relations" can prosper with respect, far into the future. Permission is granted by the Colville Confederated Tribes to anyone who wishes to use The Shield for its intended purpose.
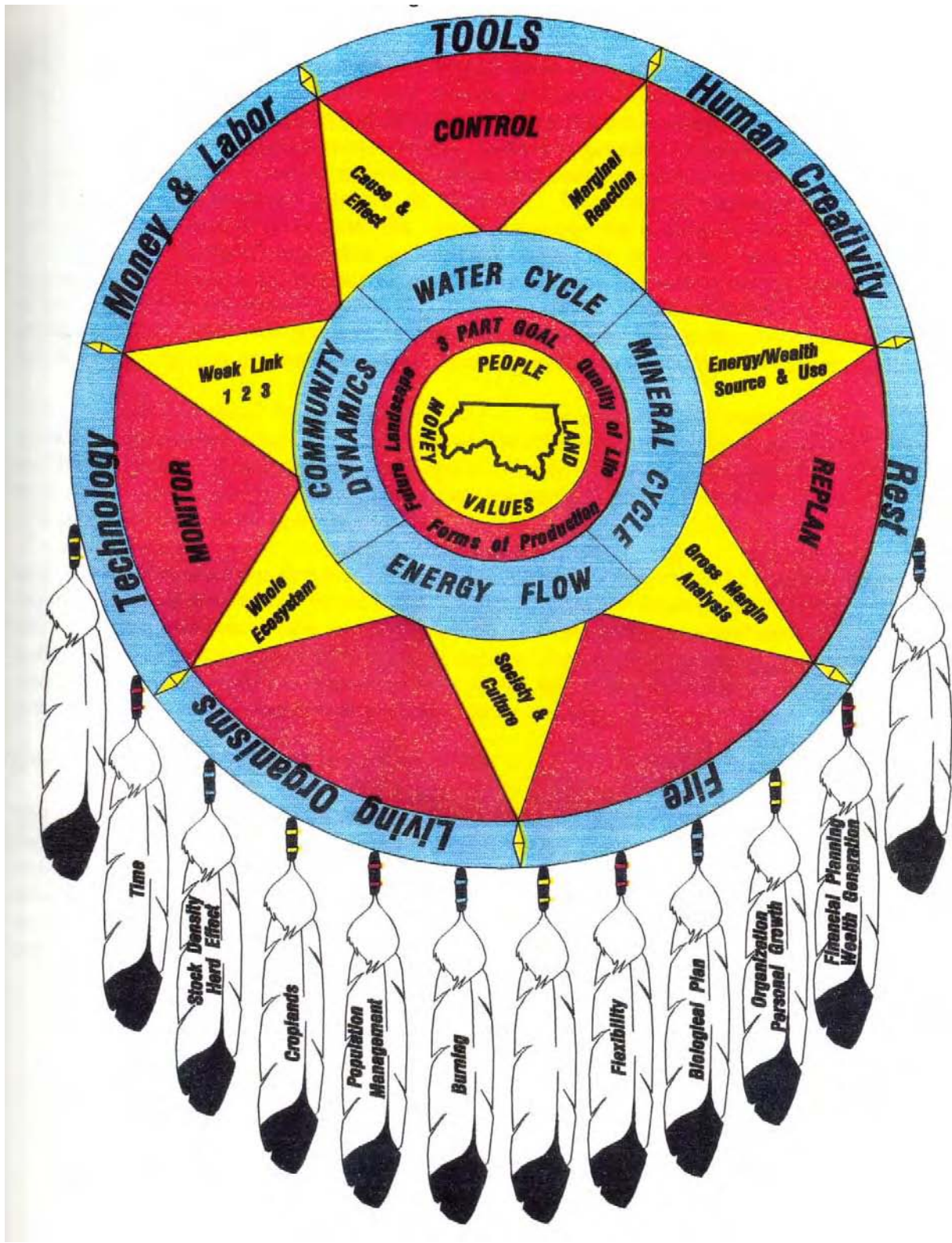
APPENDIX B. PRESENT SITUATION ASSESSMENT — 1992

Here is an assessment done to learn more about the nature and extent of the present situation in 1992:

The Colville Indian Reservation is like most managed lands throughout the world. We face serious deterioration and loss of productivity from our natural resources, which will, if left unchecked, lead to ecologic collapse, economic decline and social unrest.

To learn more about the nature and extent of the problem the Integrated Resource Management Planning (IRMP) Core Team carried out the following needs assessment activities:

1. Reviewed relevant <u>literature</u> on the ecologic, economic, and social conditions of the reservation and models of successful resource management.

2. Conducted <u>interviews</u> with 10 key informants on training needs for the Tribal government.

3. Administered a reservation wide <u>survey</u> to identify the perceptions of Tribal members as to the current conditions of the reservation and the desired future conditions.

4. Conducted a <u>group assessment</u> by the IRMP Core Team to identify the "weak link" in our organizational ability to achieve our goals.

5. Evaluated by <u>observation</u> the challenges our organization faces in achieving our goals.

6. Analyzed <u>socio-demographic statistics</u>.

This section reviews the findings of the needs assessment and describes the problem in greater detail.

The root of the problem is directly correlated to the values and beliefs of those who manage the resources. The current conditions of the reservation are a direct relationship to the management systems imposed to this date. This affects the human and economic climate as well as the ecologic condition. Consequently, any change to the resource will occur only if those who control the management system change. Our IRMP Core Team identified this as the focus of our efforts.

Therefore, we identified that to be successful, we need to provide the opportunities to alter the management value system. This can be achieved through exposure to successful management values in a climate conducive to change. The experience must be experiential in design, provide a logical thought model, and alter habits with the assistance of a supporting team.

As with most organizations that adopted the conventional "American" style of management, this problem occurs throughout our organization. Our organization is affected by the federal government system. Managers at all levels of the organization display the management values

that lead to the current conditions. Though most experts in management systems recommend change from the top, we, as mid level managers, can work only within our sphere of influence. Fortunately, the top management in our organization is committed to creating a healthy change. Our management recognizes that business as usual has not and will not give us our desired future conditions.

The next few paragraphs provide some background information about our situation and the extent of the problem.

Reservation Acreage: 1.3 million acres. This includes approximately 800,000 acres of forestland and 500,000 acres of grasslands and cropland including orchards, dryland and irrigated farmlands.

Tribal Members: 7797, roughly fifty percent live on or adjacent to the reservation.

Employees: 1139, thirty percent of which are non-tribal members.

Unemployment rate: 52 percent. Two reasons for this high level of unemployment is that people lack the skills for employment, or, if they have developed skills through education off the reservation, what they learned is not applicable to the work available on the reservation.

Average Per Capita Income: $4,428

Average Level of Education: 10th to 12th grade

Death Rates/Thousand for Alcohol-related Medical Conditions: 1.62

           Death Rates/Thousand for Selected Trauma Deaths
Homicide: 0.81
Suicide: 1.01
Accident: 1.01

Teen Pregnancy Rates: 25-30 percent

School Dropout Rates: 40 percent

Financial Resource changes: In 1919, the value of the timber harvested annually on the reservation was $2,527 (not adjusted to inflation). The value climbed dramatically to over $25 million in 1979. By 1991, the values dropped to a level around $8 million. This decline concerns us about meeting our financial needs and our ability to fund projects, which will help us become more effective, such as this project.

Volume of timber harvested: In 1919, just less than 2 million board feet was harvested from the reservation. The highest level of harvest was in 1968 at 144 million board feet. This dropped to 58 million board feet by 1991. Annual timber volume was limited by a tribal resolution due to concerns of overharvesting and ecological damage.

Forest Health challenges: The forest of the Colville Reservation is presently suffering a decline in vigor and corresponding increase in tree mortality. Over half of the commercial forest (450,000 acres) is seriously threatened by insect and disease problems.

Weed infestation on the reservation grassland areas: Approximately 50 percent (over 220,000 acres) of the reservation grassland/farmland area has a noxious weed infestation. This includes 12 species that have significant federal concern.

Changes in water quality/quantity: Though we have little documented evidence, many tribal elders talk of streams which once flowed year round. Most of these streams are intermittent today flowing only during peak runoff events. We know forest harvesting, road systems, and overgrazing has generally had negative impacts. (Later, through GIS modeling, land survey notes, and accounts by tribal elders, we learned that 40% of the intermittent streams of today were once perennially flowing streams 100 years ago.)

Threatened and endangered species: Animal kingdom species of concern on the reservation include the blotched tiger salamander, golden eagle, great blue heron, burrowing owl, meadow fritillary, silver—bordered fritillary, immaculate green hairstreak, gray wolf, black tern, prairie falcon, wolverine, bald eagle, fisher, Lewis woodpecker, long-legged bat, long billed curlew, osprey, white headed woodpecker, western pipistrel, sharp tailed grouse, and the grizzly bear. We have similar concerns with plant kingdom species.

Results of membership survey: A survey was developed and evaluated by 5 high school interns through our summer employment program. Over 100 questionnaires were distributed to Tribal elders, teens, and employees. Seventy-five percent of the questionnaires were returned. These indicated that a significant percentage of the membership surveyed is disappointed with the current condition of the reservation. The members were also asked to "paint" the desired future of the reservation. The participating membership took this questionnaire seriously offering a picture of a sustainable resource base, prosperous economy and happy, healthy quality of life. They want a sense of "pride" in the management of their reservation.

Results of key informant interviews: Several key informants representing various roles and levels in Tribal government were interviewed about the need for and what type of training would most benefit the Tribe. An overwhelming number of individuals identified that training is necessary and that the primary emphasis is in leadership development.

Observations from team building efforts: Jeff Goebel, IRMP Coordinator, has led several team-building exercises. Each team exhibited a high level of frustration due to a lack of management skills. The lack of a methodical process to achieve desired outcomes has hampered decision-making. Cultural differences and levels of self-esteem also impede the full participation of team members.

The primary deterioration to the natural resource base occurred over the last ninety years since the implementation of fire suppression, selective logging, transportation systems to extract forest

products, and overgrazing. Associated with this deterioration were the management value systems that created this decline.

The Confederated Tribes of the Colville Reservation advanced from a single disciplinary management approach to a multidisciplinary approach. None of these approaches helped the Tribe move successfully toward their complete desired goals. The Tribal Business Council adopted the approach of Integrated Resource Management in 1991. The Bureau of Indian Affairs introduced Total Quality Management to their employees. As part of the project effort, the Tribe will train all tribal employees (400) this fall in Total Quality Management. These programs advance the management of natural resources. However, without the benefits associated with a higher level of understanding and knowledge as well as a change to the management values, progress will remain slow and might even reverse.

The organization has several people with an advanced level of thinking and awareness of the problems and potential solutions. The desire for change is high, due to the personal investment that Tribal employees have for their reservation. The belief that things can be different is also high. John Smith, Physical Resources Department Director, is talented and committed to the successful implementation of Integrated Resource Management. Program Managers, within the Physical Resource Department, are dedicated to a successful effort. In addition, an IRMP Coordinator, Jeff Goebel, was hired in the spring of 1992 to organize and accelerate the efforts. Jeff has a diverse background in human resource development and holistic resource management.

The Confederated Tribes of the Colville Reservation is committed to implementing sustainable resource management through IRMP. As identified through our needs assessment, leadership development from education and value changes is critical to our success. Though the Tribe is committed to this process, we lack the financial resources to accelerate our learning. Due to the decline in our natural resource base, our financial ability is eroding.

The Confederated Tribes of the Colville Reservation has a history of working to address the problem. The reservation formed in 1872. The initial reservation area has dramatically been reduced since that time. In **1938(?),** the Tribe adopted a constitution, which mandates a responsibility of the Tribe to manage their natural resource base.

The Tribe has held numerous leadership roles in the region and nation over the years. For example, John Smith, Physical Resources Department Director, sits on Washington State's Forest Practices Board. He has worked with other groups including the Columbia Basin Fish and Wildlife Authority and Native American Fish and Wildlife Society, serving as President and Director. Don Peasley, Colville Business Councilman, is President of the Intertribal Timber Council. Other Tribal members have been leaders in the natural resource management field.

If we do not change our management values and, consequently, our management system, our natural resources will continue to deteriorate. If we move at a slow pace to implement an education program, which changes management values, we may lose momentum and credibility on the course leading to our desired outcomes.

Without a comprehensive change in management values, we will revert back to conventional systems of management or even a collapse of management due to the frustration of Tribal members. It is imperative that we address the "weak link". We cannot strengthen our organization without addressing our weakest point. There is a real danger that the Tribe will revert back to short—term economically driven natural resource management. The long-term results of this would be ecological, economical, and, ultimately, social disaster.

APPENDIX C. DEPARTMENT OF NATURAL RESOURCES STRATEGIC PLAN

August 11, 1994

THE MISSION STATEMENT OF THE NATURAL RESOURCES DEPARTMENT FOR THE CONFEDERATED TRIBES OF THE COLVILLE RESERVATION

WHY DOES THE NATURAL RESOURCES DEPARTMENT EXIST:

To provide subsistence, cultural opportunities and economic benefits for the Tribal Membership through sustainable ecosystem management. We accept our responsibility to manage, protect and enhance tribal natural resources and to provide multiple products and services for the Tribal Membership, on the reservation and on accustomed and traditional lands.

WHAT IS THE NATURAL RESOURCE DEPARTMENT KNOWN FOR:

We are a leader in sustainable ecosystem management through successful Integrated Resource Management Planning based upon clearly defined holistic goals and objectives. We work, with proficiency and professionalism, to achieve a healthy ecosystem, and provide a viable economy, while preserving cultural values for the Tribal Membership.

OUR INTERNAL AND EXTERNAL RELATIONSHIPS:

We have cooperative relationships based on high professional and ethical standards. We respect individual values and capitalize on the wealth of knowledge and experience of Tribal Members, Business Council, Tribal, and BIA employees. Department cooperation and communication is excellent and we feel we are part of a cohesive team.

Through cooperation and creative problem solving we have strengthened our external relationships with other Tribes, organizations, Federal, State, and County agencies.

DEFINITIONS:

HOLISTIC: Emphasizing the importance of the whole and the interdependence of its parts, i.e., soil, air, animal, people, water, plants, etc.

INTEGRATED RESOURCE MANAGEMENT PLANNING (IRMP): A process where many resource managers join together to identify and achieve common goals through consensus decision making relating to natural resources and the ecosystem.

SUSTAINABLE ECOSYSTEM MANAGEMENT: Ecosystem management that achieves long-term ecosystem health and productivity by maintaining soil productivity, gene conservation, biodiversity, landscape patterns, and the array of ecological processes.

INTERNAL: Within the boundaries of the Colville Indian Reservation.

EXTERNAL: Any entity outside the Colville Indian Reservation.

ACCUSTOMED AND TRADITIONAL LANDS: Traditional and ancestral territory, former reservations and the Colville Indian Reservation

August 11, 1994

FIVE-YEAR GOALS
NATURAL RESOURCE DEPARTMENT

Our policy is to know at all times the direction and purpose of the organization through periodic refinement of goals and specific objectives. Management decisions and actions are evaluated against goals and objectives through systematic and periodic testing and monitoring. Actions are modified as necessary based upon the results of the testing and monitoring.

By 1999, the Natural Resource Department will be a department responsive to CBC and Tribal Membership by demonstrating these characteristics:

-       optimize integration of functions, minimize duplication of effort.
-       stimulate creativity and ownership by encouraging decisions at "lowest level" and maximizing public involvement.
-       have adequate funding and staff to achieve objectives and goals.
-       increase effective communication with CBC, staff, public, and within the organization.- continue to evaluate and modify the organization as required to achieve goals.

By 1999, all programs in the Natural Resource Department will be effectively using an interdepartmental data bank. This data bank will contain the most accurate and complete landscape inventory possible and will be used for analysis and decision-making.

By 1999, the Natural Resources Department will be fully utilizing the holistic process to plan, implement, and monitor sustainable ecosystem management of the Tribal resources.

By 1999, the Natural Resources Department will be aggressively encouraging, promoting and providing educational opportunities for our Tribal Membership and Employees.

By 1999, the Natural Resources Department will be actively engaged in assisting other departments to promote a healthy environment and populace.

DEPARTMENT FIVE-YEAR GOALS AND OBJECTIVES

1. By 1999. THE NATURAL RESOURCE DEPARTMENT WILL BE A DEPARTMENT RESPONSIVE TO CBC AND TRIBAL MEMBERSHIP BY DEMONSTRATING THESE CHARACTERISTICS:

-       **OPTIMIZE INTEGRATION OF FUNCTIONS. MINIMIZE DUPLICATION OF EFFORT.**
-       **STIMULATE CREATIVITY AND OWNERSHIP BY ENCOURAGING DECISIONS AT "LOWEST LEVEL" AND MAXIMIZING PUBLIC INVOLVEMENT.**
-       **HAVE ADEQUATE FUNDING AND STAFF TO ACHIEVE GOALS AND OBJECTIVES.**
-       **INCREASE EFFECTIVE COMMUNICATION WITH CBC, STAFF, PUBLIC, AND WITH THE ORGANIZATION.**
-       **CONTINUE TO EVALUATE AND MODIFY THE ORGANIZATION AS REQUIRED TO ACHIEVE GOALS.**

A. To work toward the Tribe's three-part goal:

- by helping the Tribe clearly define their three-part goal by December 31, 1994.
- by integrating all natural resource planning by September 1, 1994.
- by clearly defining all natural resource functions by July 1, 1994.

To invite Council and public to district staff meetings.
To have four public meetings per year to maximize public involvement.
To obtain clearer and consistent direction from the CBC on goals and objectives.
To have each program within the NED adopt a mission statement and future goals.
To develop an effective communication process for the membership awareness and understanding of NRD's program level goals, objectives, responsibilities.
To encourage the maximum practical interaction between the tribal officials and individual reservation citizens in identifying and establishing the priorities of the reservation road needs.
To ensure, by open hearing procedures on scheduled projects, that all projects constructed meet the overall reservation development plan and the needs of the local reservation citizens.
To work toward CBC's goals.
To be involved in establishing the Tribal mission, goals, and strategic planning.
To identify all functions of the Natural Resources Department.
To provide direction and time for Natural Resource Department employees to work for some common good of the people.

B. To develop a creative environment within the Tribe:

- by developing and implementing an employee idea and recognition system for the Natural
Resource Department by December 31, 1994.
- by establishing a natural resource Total Quality Management team by September 1, 1994.

To empower employees and others in decision making for job accomplishments.
To have weekly TQM meetings to empower.
To continue TQM training and development.
To develop an employee reward and recognition system that would recognize significant
efforts, attendance, ideas, and efforts or work above and beyond normal
expectations.

C. To promote better communication within the department:

- by installing a Local Area Network and provide training in electronic communication by March
15, 1995.
- by holding semi-annual Natural Resource Department all-staff meetings and including
opportunities for staff input & team building.
- by producing a quarterly NRD newsletter.
- by hosting an IRMP workshop by March 31, 1995.

To encourage the utilization of the fax for faster communication to and from programs
within the department.
To network with other departments (no reinvention).
To develop communications procedures within programs and between programs using
TQM principles.
To have minutes of NRC meetings passed out.
To implement new NRD structure by March 1.
To list all on an organizational chart to get a better understanding of each programs
responsibilities.

D. To have better utilization of our time and money:

- by developing and implementing a monitoring system with quarterly evaluations by July 1,
1994.
- by developing an annual NED budget by May 1 of each year, that prioritizes activities for
funding.
- by establishing a NRD administrative position to monitor department budgets and identify
opportunities for funding by June 1, 1994.

To develop a list of projects current and planned (department projects).
To follow through on monitoring and evaluation of our department planning process.
To have monthly and quarterly meetings for monitoring.
To evaluate indirect cost pool to determine if we are receiving administrative benefits.
To identify duplication areas.

To evaluate program for good and bad and correct shortcomings.

To utilize Department computers in most efficient and productive manner for organization.

To utilize the Quicken program for the department cuff accounts.

To have weekly meetings with staff to prioritize and organize tasks for the upcoming week.

To prioritize our activities and direct funding to the most needed areas.

To prepare and review budgets.

To conduct in-depth performance evaluations, focus: good, weakness, where position going, change work emphasis.

To distribute GIS sign off sheet.

To design and construct roads to current accepted engineering standards for appropriate traffic volume. This includes employing efficient work methods.

To broaden responsibilities of employees.

E. To analyze current projects and identify staffing, training, facilities, and equipment needs:

- by conducting a NRD inventory and needs assessment by December 31, 1994.

To staff up where needed and develop a staffing plan as soon as possible.

To do an inventory and needs assessment of equipment, supplies, computers, vehicles, etc.

To adequately provide office and storage facilities for department needs.

To handle procurement of equipment and supplies.

To make efficient use of staff already on board.

To use cooperative agreement to move resources to where needed.

To create a Natural Resources Department motor pool.

To research and evaluate staff and field needs.

To develop an organization chart and assess staffing needs from it.

To expose our people to other people and agencies making similar type decisions.

To find a way to take some of the pressure off staff so that they can put more effort into areas of expertise and interest that serves the mission of the department.

To enable staff to reach program goals.

To staff accordingly based upon the greatest return for the dollars invested.

2. By 1999, ALL PROGRAMS IN THE NATURAL RESOURCE DEPARTMENT WILL BE EFFECTIVELY USING AN INTERDEPARTMENTAL DATA BANK. THIS DATA WILL CONTAIN THE MOST ACCURATE AND COMPLETE LANDSCAPE INVENTORY POSSIBLE AND WILL BE USED FOR ANALYSIS AND DECISION MAKING.

A. To create an intra-departmental spatial data library:

- by doing an inventory of all NED spatial data; including related software and hardware by
     August 31, 1994.
- by performing a spatial data needs assessment utilizing the pertinent layers of the spatial data
     inventory to facilitate appraisal of user requirements by October 31, 1994.
- by identifying, prioritizing, and performing digital spatial data input, analysis, and
     model/cartographic output for the eighteen months following April 1994.
- by designing and implementing the spatial data library by December 31, 1994.

     To utilize GIS as an effective management tool.

     To focus on: a) overall information system development, 2) end user training, & 3) raster
         GIS modeling and image processing.

     To optimize all product values, measurement, accounting and distribution quarterly.

     To establish rapport with Council regarding GIS activities and progress.

     To finish maps for the Council.

     To develop, plan, and scope out funding for project base map.

     To evaluate accuracy and precision of all basic data themes.

     To add tics for all coverage.

     To complete phase 1 of the LAN; connecting GIS — Environmental Trust — Fish and
         Wildlife — BIA.

     To increase disk space and overall system efficiency.

     To upgrade hardware to meet current staff and user needs.

     To set up UPS unit and power down software.

     To install GIS antenna grounding rod.

     To computerize the strategic planning process, scheduling (including the Project Proposal
         Process), annual budget, travel, and training data and to maintain this system up-
         to-date.

     To set up computerized system for tracking transactions and use of the annual reports.

     To set up computerized billing system for deferred land contracts and enforce contracts
         by collection or cancellation.

     To update the Integrated Records Management System to utilize the system for
         processing lease renewals (90 day notices), billings, lease distribution and data for
         the annual reports.

     To consolidate all available data including current inventories, past management
         practices into an accessible retrieval system.

     To agree on what data to utilize in the analysis and decision making process

     To make known what data is available to all programs (index).

     To select and implement a computer network.

     To use interactive software.

     To encourage interdepartmental communication and interaction.

     To develop common data formats and forms for GIS/GPS information management
         training.

     To install all needed hardware, software, and staff for effective networking.

     To select computer data coordinate sql. comp database that can be used on GIS/PC
         computer network.

B. To coordinate the spatial data inventory and analysis for natural resources:

- by developing an accurate digital base map for the reservation by June 1, 1995.
- by inventorying the reservation road system by December 31, 1994.
- by completing the editing of soil survey data and inputting of soil information into the GIS by October 1, 1994.
- by updating and improving the ownership layer and developing a system that will provide for routine and frequent updates by December 31, 1995.
- by performing spatial data analyses as needed for reservation-wide and project based planning by June 1, 1994.
- by inventorying the natural resource base and developing classifications to describe ecological conditions on the reservation (i.e., commercial forest acres, deciduous woodlands, community types, general land cover, T&E species, fish & wildlife habitat & populations, etc.) by April 30, 1996.

   To develop a draft community type classification for habitat types across the reservation.
   To extensively inventory deciduous woodlands across the reservation, and develop an ecological classification.
   To develop a general land cover classification across the reservation.
   To develop a wildlife habitat classification.
   To assign a team to clearly define resource inventory needs to do ecosystem management.
   To gather information so data bank is complete.
   To implement data collection and recording.
   To check the accuracy of the inventory of GIS and revise.
   To gather and compile damage and vandalism occurrence.
   To gather baseline data on recreationists.
   To gather and compile data on the types and occurrences of safety violations.
   To develop a more active role in biological/ecological and cultural/traditional data collection in usual and accustomed areas.
   To complete exhibit B's on all leases that expire in FY-95 and on all new leases.
   To update continuously all ownership records and the Integrated Records Management System in order that all branches and programs will have up-to-date ownership including updating, or if needed, recreating ownership layer.
   To complete blocking and land ownership on new aerial photos.
   To provide range input to Omak Creek watershed plan.
   To complete the edit of soil survey maps.
   To assist with putting soils information on the GIS.
   To complete all contaminant surveys as requested by the Reality Department.
   To extensively inventory 250,000 commercial forested acres.
   To intensively inventory 50,000 commercial forested acres.
   To fix road attributes.
   To develop in-stream flows.

3. By 1999, THE NATURAL RESOURCES DEPARTMENT WILL PLAN, IMPLEMENT, AND MONITOR SUSTAINABLE ECOSYSTEM MANAGEMENT OF THE TRIBAL RESOURCES.

A. To incorporate & implement holistic processes in our daily decision-making:

- by developing and implementing one NRD planning process by June 1, 1994.

     To interact with other departments.
     To be a role model.
     To develop the organization that will support sustainable ecosystem management by October 1, 1994 and comply with Tribal budget requirements.

B. To develop and implement an annual monitoring process and reporting system to assess progress toward goals:

- by developing and implementing a project specific and/or broader monitoring plan for all NED activities by October 31, 1994.

     To continue to enforce the Forest Practices Water Quality Act.
     To continue to follow-up on all pending transactions.
     To be responsible for contract compliance and doing continuous inspections for lease or contract enforcement (compliance checks) and trespass.
     To continue to follow-up on all pending leases, permits and rights-of-way.

C. To design and implement an ecosystem management plan:

- by analyzing data and identifying management parameters that define guidelines and desired future conditions by October 31, 1994.
- by hiring reservation-wide IRMP team by June 30, 1994.
- by designing and implementing a draft reservation-wide and off-reservation IRMP plan by April 30, 1996.

     To provide range planning input to reservation-wide IRMP and IRMP's on individual watersheds.
     To gather data and submit recreation concerns on the Resource Management Plan within the timeline to be established.
     To begin a cooperative planning effort with NPS and Spokane Tribe to develop a shoreline management plan by FY '96.
     To develop a Lake Roosevelt Water Quality Management Plan.

D. To make the Reservation healthy and sustainable.

- by the integrated planning, implementation, and monitoring of 20,000 forested acres by September 30, 1994.
- by incorporating soil quality standards into all NRD projects effective June 1, 1994.

- by completing the testing of knapweed biological control agents by September 30, 1994.
- by the integrated planning, implementation, and monitoring of a reservation-wide noxious weed control plan by September 30, 1995.
- by initiating a stream quantity and quality monitoring system for five key reservation streams and publishing results by September 30, 1995.
- by developing and implementing a facility management plan for NRD facilities by September 30, 1994.
- by the integrated planning, implementation, and monitoring of 50,000 non-forested acres by September 30, 1995.

    To provide sanitary campground conditions and facility designs and placement that will pass an annual inspection from the tribal sanitarian.
    To coordinate with the Weed Control Program to assess the noxious weed conditions and develop a plan to reduce the noxious weeds in all the campground areas.
    To re-establish native grasses in campground areas where possible.
    To meet with Fire Management and assist them in developing a plan to reduce the number illegal campfires.
    To develop and implement soil quality goals.
    To identify and prioritize soil restoration activities.
    To complete field-testing on knapweed biological control agents.
    To coordinate all weed control projects with county weed boards and other agencies.
    To complete range development projects in accordance with range plans and coordinate with permittees and other resources.
    To review all Environmental Assessments completed at the Colville Agency.
    To improve range management.
    To protect water rights.
    To perform maintenance and repair services in a way that protects the environment of the reservation, adjacent lands, and individual Indian lands.
    To prevent spread of knapweed through BIA/Tribal knapweed control project.
    To treat 19,975 forested acres by September 30, 1995.

E. To implement ways of generating wealth for the Tribe through the natural resource base:

- by processing all land sales, gift deeds, fee-to-trust transactions, leases and probates within 120 days of initiation.
- by identifying and initiating development of one socially and ecologically acceptable mineral development by September 30, 1995.
- by the identification, review, planning and development of one new natural resource based revenue generating enterprise by September 30, 1995.
- by reviewing and updating all fee rates (range, leasing, gravel, etc.) prior to January 1 of each calendar year.

    To handle all land sales, gift deeds, fee to trust transactions and deferred land contracts.
    To facilitate mineral exploration on the Reservation by exploration companies and Tribal members.
    To facilitate mineral development (mining) on the Reservation.

To facilitate sand, gravel, and stone permitting.

To gather data and submit recreation concerns on the interim timber sales within the timelines set.

To handle all leases, i.e., agricultural, pasture, business and housing, permits, and right-of-way on trust land on or adjacent to the Colville Indian Reservation.

To review leasing forms (Exhibit B's, crop reports, compliance checklists, etc.

To revise to conform to required standard form conformation.

To handle the processing and probating of Indian estates, prepares Inventories and Last Will and Testaments for individual Indians, researches family history, closes estates and posts and maintain updated ownership on Colville tracts.

To certify all P.L. 874 forms for school districts on or adjacent to the Colville Reservation.

To continue to follow-up on all pending probates, close outs and process to completion these transactions, which affect land title.

To be involved in the Tribal economic development process.

F. To plan, develop, manage, and maintain cultural, traditional, spiritual & recreational uses and facilities:

- by the review, planning, and implementation of a cultural management plan for the reservation by September 30, 1995.
- by the development of a socially acceptable reservation-wide recreation plan by September 30, 1995.
- by pursuing on-going treaty tribe status for the Confederated Tribes of the Colville Reservation.

- by providing for the Tribes' subsistence fishing and hunting opportunities through in-season regulation by September 30, 1995.
- by providing for non-member hunting and fishing opportunities through in-season regulation by September 30, 1995.

To upgrade, maintain and develop campground facilities (depending of availability of FY '94 funding).

To proceed with IAC grant to plan and develop a boat launch ramp.

To design and install facilities in the campgrounds at a minimum impact to the natural resources.

To perform a schedule maintenance service to all campground areas.

To develop a permit fee and area closure policy that meets the CBC approval for the ORV code.

G. To protect the Tribe's natural and cultural resources:

- by the development and implementation of an integrated natural resource department enforcement division by September 30, 1994.
- by the cross-training of all natural resource field staff in the identification of cultural and archaeological significant resources by September 30, 1994 in order to assist in the management of these resources.

- by the review, revision, and enforcement of all regulatory mandates necessary to meet
    sustainable ecosystem management by September 30, 1995.
- by establishing an integrated team to deal with off-reservation issues by September 30, 1994.

To provide cultural orientation of all department employees.
To improve our knowledge of cultural plants, their cases, habitat and response to
    management.
To support the assignment of a full-time attorney to cover natural resource issues.
To provide law enforcement support services for the Parks & Recreation, Fish &
    Wildlife, Archaeology, and Fire Management Departments.
To perform boat and vehicle patrols to monitor camper activities to ensure they are
    abiding to tribal and federal resource protection laws and regulations.
To assist the Archeology Program in performing an annual inspection on archeology and
    cultural areas.
To perform scheduled inspections of archeology and cultural areas, monitor areas for any
    disturbances and report disturbances to the Archeology Program.
To bring range fee distribution to land owners up-to-date.
To meet all regulatory mandates, Bureau, Tribal and other Federal, beginning February 2,
    1994.
To review and update Tribal laws and regulations associated with Natural Resource
    Department.
To develop and adopt laws and regulations to protect natural resources.
To enforce Tribal, federal and state laws and regulations to protect the natural resources
    and the users of the natural resources.

4. By 1999, THE NATURAL RESOURCES WILL BE AGGRESSIVELY ENCOURAGING, PROMOTING, AND PROVIDING EDUCATIONAL OPPORTUNITIES FOR OUR TRIBAL MEMBERSHIP AND EMPLOYEES.

A. To provide adequate training for all employees to maintain and expand knowledgeable:

- by the implementation of a coordinated department-wide training needs assessment and the
    development of a training schedule to best meet these needs by September 30, 1994.

To assist all branches on developing and writing Environmental Assessments upon
    request.
To continue and accelerate training for staff. Let them decide how they would like to
    focus their efforts beyond the training period. Provide them an opportunity for
    outside training such as at ESRI.
To prepare Individual Development Plans, locate training sources for formalized training
    and allocate time for on the job and cross training.
To establish a training coordinator position that would work with employees and
    customers to identify training needs, to implement training plan, to develop plans
    to educate and inform other people, employees, and public.

To develop monitoring system for the education for progress, tunnel vision.

To set up job promotion guidelines.

To develop training needs assessment for all personnel.

To put managers through 1/2 day training in GIS fundamentals.

To put select staff through full day training in GIS fundamentals, ARC/VIEW and basic UNIX commands.

To get more training in UNIX, C programming, etc.

To provide training on GIS to at least be able to access data. This would give each program a better idea of what information is useful and which information is lacking.

To provide adequate training and experience in computer software and GPS hardware to all staff.

To train at least one staff per program or branch to access data and assist rest of staff with data needs and access.

To implement training and usage of data bank.

To provide standardized computer skills to all staff.

To provide training and education to department personnel.

To provide all employees immediate, on-line access to all resource information by September 30, 1995.

To have more computer equipment available to employees.

B. To continue staff training in sustainable ecosystem management principles and techniques (HRM decision making process):

- by providing introductory HRM training to all natural resource staff by September 30, 1995.

- by providing HRM support service (i.e., field trips, testing workshops, refresher and advance courses, etc.) on a monthly basis.
- by conducting semi-annual meetings between the Executive Board and the Management Team to identify areas of common concern, develop strategies to address concerns, and monitor progress.

C. To provide adequate training in Automatic Data Processing to all staff:

- by the identification of training needs and provision of this training (such as GIS (PC Arcview, UNIX internetworking, spatial data library use, digital cartography, ARC/INFO, etc.), (GPS, data recorders, and other ADP needs (Windows, PC software, mouse usage, etc.)) by September 30, 1995.

D. To increase the educational exchange and awareness between us and the general public, membership, tribal and BIA departments and external resource agencies.

- by the development and implementation of an NRD intern program by September 30, 1994.
- by the initiation and implementation of an NRD scholarship by September 30, 1995.
- by the establishment of an NRD Information Officer or mechanism to provide information to schools, media and public by September 30, 1995.

- by conducting semi-annual public forums to provide awareness of management and regulatory mandates (laws, ordinances, resolutions, etc.) and receive feedback on public opinion.

        To perform the design, construction, and construction supervision of road projects in such a way as (1) to provide technical and managerial training experience to local Indian citizens, (2) to promote employment of Indian citizens, and (3) to promote the development of Indian road construction contractors.

        To encourage Tribal members to a climate of Tribal preference in hiring practices except in situations of equivalent qualifications.

        To develop rule making and training about resource protection.

        To train and equip law enforcement personnel in investigating "boating under the influence" violations.

5. By 1999. THE NATURAL RESOURCES DEPARTMENT WILL BE ACTIVELY ENGAGED IN WORKING WITH OTHER DEPARTMENTS, AGENCIES, GOVERNMENTS, AND INSTITUTES TO PROMOTE A HEALTHY ENVIRONMENT AND POPULACE.

A. To keep involved in proposed and current development, growth, industries and utilization that impact our tribal resources.

- by regularly participating in and communicating within public forums such as the CBC, CTEC, Colville Indian Livestock Association, Eastside Ecosystem Management Project, SOR, and other project proposals that affect tribal resources.
- by annually participating in inter-agency cooperative agreements with tribal governments, counties, state, and federal agencies for various projects.
- by developing a process for NRD to provide comments and integrated planning for other project proposals outside NRD that affect tribal resources by September 30, 1995.

        To address ID Team Process.

        To assist Colville Indian Livestock Association upon request.

        To coordinate with all agencies regarding hazardous chemical spills and cleanups.

        To develop a program whereby Forestry, Water Quality, and TFW are seeking the same level of resource protection.

        To assist all disciplines and land users with soils information upon request.

        To improve integration of water programs with other programs.

        To provide for inter-agency cooperative agreements with tribal governments, counties, state and other Federal agencies for various phases of the Road Maintenance Program whenever possible.

        To enlist the participation of local governments or outside agencies in the funding or joint funding of tribally selected road construction projects; especially at those locations where road projects serve non-Indian land, as well as Indian land.

To do the appropriate timber cruise and appraisal to support transactions and maintain close working relationship with the Natural Resource Committee and other governmental offices on real estate transactions and ownership.

To assist Natural Resource Committee in assessing their Land Purchase Program by developing priorities and reviewing list with Committee.

To maintain a close working relationship with the Natural Resource Committee and other governmental offices on leases, permits, and rights-of-way.

To support the Executive Board.

To recognize tribally designated reservation roads committee members as the officials responsible for reviewing the reservation road construction needs and recommending priorities to the tribal council.

To encourage the use of Agency Road Construction Committees in reviewing the road needs of reservations within the jurisdiction of each Agency Office and in making recommendations to the Bureau of Indian Affairs on the annual schedule of road construction for that Agency.

To share information gathered in interdepartmental databank with other departments and help them utilize GIS.

To create a forum where representatives from natural resources could meet with other Tribal departments to share information, goals, and ideas.

To encourage a meeting with all departments for information sharing.

To assist other departments when needed.

To provide our involvement to other departments with what constitutes a healthy environment and populace.

To be involved in the SOR.

To be involved in the Eastside Ecosystem Management Project.

B. To provide for the safety and general welfare of the public:

- by planning, scheduling and implementing a roads maintenance and repair schedule by September 30, 1995.
- by conducting an inventory and needs assessment of NED safety standards and conditions by December 31, 1994.
- by developing a coordinated multi-agency search and rescue team by October 1, 1994.

To reduce the number of water skiing violations.

To reduce the number of alcohol violations in prohibited areas.

To provide an increase in law enforcement presence to adequately cover the increase in visitation by FY '95.

To perform boat and vehicle patrols to deter crime and ensure the public is abiding to tribal and federal safety laws and regulations.

To meet with all agencies responsible for providing emergency assistance and develop a coordinated and efficient search and rescue core team by FY'95.

To review facility designs and adopt a safer and sanitary design.

To provide safe campground conditions and facility designs that will pass an annual inspection from the tribal safety inspector.

To perform roadway maintenance that provides safety to the traveling public and safe-working conditions for BIA personnel engaged in the road maintenance operations.

To provide maintenance and repair services for roads, bridges and certain airstrips so long as these conditions exist: 1) funds are available, 2) Tribal governing bodies have determined with priority for maintenance activities within their jurisdiction, and 3) the roads are public roads on the BIA or tribal systems.

To comply with applicable statutes and regulations pertaining to constructing Indian reservation roads and bridges.

To plan, schedule, and provide maintenance and repair services according to the standards set forth by the American Association of State Highway and Transportation Officials (AASHTO).

Figure 3. Testing Example

	Natural Resource Strategic Plan - FY 1995-6										
ID	Name	Weak	Cause	Ecosys	Society	Energy	Contract	Resolution	Budget	Financial	Priority
1	1. By 1999, the Natural Resources will be aggressively encouraging, promoting and provi										Highest
2											
3	To conduct a department-wide needs assessment and develop a training schedule.	P	P	P	P/F	F/P	N	Y	Y	WIM	Very High
34	To develop the capacity within the Tribe in order to implement the IRMP plan	P	F	P	P	P	N	N	N	W	Highest
58											
59	2. By 1999, the Natural Resource Department will plan, implement and monitor sustainabl										Very High
60											
61	To do a Reservation-wide INTEGRATED RESOURCE MANAGEMENT PLAN	F	P	P	P	F/P	Y	Y	Y	WIM	Very High
293	To integrate the planning, implementation and monitoring of 50,000 non-forested acr	F	P	P	P	P/P	Y/N	Y	Y	WM	Highest
300	To implement wildlife management	F	P	P	P	P/F	Y	Y	Y	WM	Very High
402	To implement fisheries management	F	P/F	P	P	F/P	Y	Y	Y	WIM	High
518	To perform general Water Quality activities	F	F	P	P	F/P	Y	Y	Y	WIM	High
554	To develop and implement soil quality standards.	F	F	P	P	F/P	N	N	Y	WM	Medium
560	To provide for integrated fire management planning, implementation and monitoring annually	F	P	P	P	F/P	N	N	Y	WM	Very High
561	To make the reservation healthy and sustainable by the integrated planning, implem	F	P	P	P	P/P	Y/N	Y	Y/N	WM	Highest
623	To integrate planning, implementation and monitoring of a reservation wide noxious	F	F	F	P/F	F/P	Y	N	Y	IM	High
632	To plan, develop, manage and maintain recreation facilities	F	F	P	P	F/P	Y	Y	Y	WIM	High
645	To plan, implement and monitor a strategic road management plan that is compatibl	F	F	F/P	P	F/F	Y	Y	Y	WIM	High
664	To identify, review, plan, and develop of one new NR based revenue development	F	P	P/F	P/F	P/P	N	N	N	W	Medium
667	To promote Colville Tribal culture and traditions.	P	P	P	P	P/F	N	Y	Y	WIM	Highest
668											
669	3. By 1999, all programs in the Natural Resource department will be effectively using an i										Higher
670											
671	To coordinate the spatial data inventory and analysis for the Natural Resource Depa	F	P	P	P	P/P	Y	N	Y	WM	Highest
718	To utilize department computers in most efficient/productive manner	F	P	P	P	F/P	N	N	Y	WM	Very High
742	To develop a medium scale base map from USGS DOQ coop	F	P	P	P	P/P	N	N	N	WM	Highest
745	To design and implement a comprehensive spatial data library for the storage of nat	F	P	P	P	P/P	Y	N	N	WM	Highest
753	To provide efficient and effective access to the GIS through the continued developm	F	P	P	P	P/P	Y	N	N	M	Highest
766	To develop an accurate digital base map	F	P	P	P	?/F	N	N	N	WM	Very High
769											
770	4. By 1999, the Natural Resource Department will be responsive to the CBC and Members										High
771	- Optimize Integration of functions and minimize duplication of effort										o Not Level
772	- Stimulate creativity and ownership by encouraging decisions at the lowest level and optimizi										o Not Level
773	- Have adequate funding and staff to achieve goals and objectives										o Not Level
774	- Increase effective communication with CBC, staff, public, and with the organization										o Not Level
775	- Continue to evaluate and modify the organization as required to achieve goals										o Not Level
776											
777	To help the Tribe clearly define their Holistic Goal, develop an action plan, and devel	P	P	P	P	P/P	N	Y	Y	WM	Highest
801	To share information between the Tribal membership and Natural Resources	P	P	P	P	P/F	N/Y	Y	Y	WIM	Highest
863	To integrate all natural resource planning through strategic planning.	P	P	P	P	P/F	N	N	Y	WM	Highest
917	To manage alloted and Tribal lands in a sustaining manner.	F	P	P	P	P/F	Y	Y	Y	WIM	Very High
929											
930	5. By 1999, the Natural Resource Department will be actively engaged in working with oth										Medium
931											
932	To develop Tribal policy for Okanogan River Basin, north half, Columbia river and of	F	P/F	P	P	F/P	Y	Y	N/Y	WIM	High
947	To enforce the Forest Practices Water Quality Act	F	F	P	P	F/P	Y	Y	Y	WIM	High

1

9/28/95

ID	Name	Weak	Cause	Ecosys	Society	Energy	Contract	Resolution	Budget	Financial	Priority
						Natural Resource Strategic Plan - FY 1995-6					
962	To improve co-mgt. of tribal Fish and Wildlife resources with state federal and privat	F	P/F	P	P	F/P	Y	Y	Y	WIM	Very High
972	To participate in processess that affect Tribal resources	F	P/F	P	P	F/P	Y/N	Y/N	Y/N	WIM	High
1002	To improve integration of water programs with other programs	P	P	P	P	F/P	Y	N	Y	WIM	Highest
1011	To provide for the safety and general welfare of the public when recreation resource	F	F	P	P	F/P	Y	Y	Y	WIM	High
1156	To protect Tribal Water Rights	F	F	P	P	F/P	Y	Y	Y/N	WIM	High
1169	To develop a Lake Roosevelt Water Quality Management Plan	F	P/F	P	P	F/P	Y	N	Y/N	WIM	High
1174	To maintain an Environmental Health Program	F	F	P	P	F/P	Y	Y	Y	WIM	High