AN ABSTRACT OF THE THESIS OF


Abstract approved

Courtland L. Smith

In the fall and winter of 1999/2000, efforts by federal, state, and local agencies to restore salmon habitat by protecting land adjacent to rivers and streams drew intense responses citizens in the Pacific Northwest. Despite efforts to “involve” citizens in the development of riparian protection policies, many did not believe their knowledge or concerns were considered or addressed.

The PLACE (People Learning About Community and Environment) mapping technique was developed and tested as a way to improve the quality of citizen participation by improving their ability to help define the situation to be addressed by policy. The PLACE mapping technique is guided by LINCS (Learning-oriented, Interactive, Non-competitive, Collaborative, Systemic inquiry) theory, which suggests that contentious situations will be improved by increasing learning among community members. Participants in PLACE mapping sessions explore and learn from the knowledge and experiences of community members to appropriately identify the situation and criteria that need to be addressed by policy.

The PLACE mapping technique is shown to promote learning among participants, but limitations are revealed in the format of project that restricts learning to isolated groups by limiting interactions among diverse interests.
Using PLACE Mapping to Improve Public Participation in Tillamook County, Oregon Riparian Action Planning

by

David C. Primozich

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David C. Primozich, Author
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Using PLACE Mapping to Improve Public Participation in Tillamook County, Oregon Riparian Action Planning

CHAPTER 1: BACKGROUND

1.1 INTRODUCTION

Public participation methods used for natural resource policy development have not facilitated learning. As a consequence, complex systemic relationships are not widely considered and citizens do not believe that their concerns and knowledge are validated or understood by policy makers. Public participation in contentious policy situations is often solution driven and takes place after a threat is perceived. Solution driven participation at the outset of public consideration in contentious issues diminishes the ability of policy makers and community members to interact and learn together about a situation and the complex criteria that need to be considered for policy development.

By focusing on improvements to a situation rather than seeking “solutions,” “fixes,” or “resolutions” to a problem, contentious issues become more manageable (Daniels and Walker 1996). The burden of attempting to “solve” a problem leads to a narrow definition of what needs to be “fixed” and solutions lack systemic considerations (Kofman 1995; Shipka 1995). Situation identification, target development, and pathway evaluation are three broad stages used in decision-making (William 2000). When a situation is adequately identified, appropriate targets for improvement can be developed. When the range of systemic factors that
influence perceptions of a situation have emerged, potential pathways that achieve targets can be evaluated for their systemic implications (Figure 1). To develop appropriate targets and create appropriate pathways that achieve those targets, a situation must be adequately identified and understood.

Figure 1. Situation, Target, Pathway Diagram. Illustrates feedback loops between situation identification, target development, and pathway evaluation. Adapted from William 2000.

The primary concern of this study is citizen perceptions of the situation that needs to be addressed by policy. Critical to adequately identifying issues and concerns in contentious situations is learning. Learning is the act of "coming to know" or "coming to realize" (Merriam-Webster's Dictionary 1997: 663). By realigning the focus of early inquiry toward learning from citizens regarding their perceptions of a situation rather than "fixing" a problem, inquirers generate
knowledge about relationships and factors of influence important for long range improvement. Learning orientation increases openness to diverse knowledge and experience bases and expands the possibilities of discovery. In learning-oriented dialogue, interactions between citizens are not competitive and advocacy-based, but rather opportunities to enhance understanding of the situation to be improved.

This research is guided by three basic assumptions. First, learning from citizen perspectives prior to action planning will improve knowledge of the situation to be addressed. Second, a learning orientation unleashes the creative capacity of humans to construct, evaluate, and reconstruct cultural institutions in response to continually changing social expectations, values, and norms. Third, interactive, collaborative systemic inquiry with visual tools promotes learning.

This study examines a contentious riparian action-planning situation in Tillamook County, Oregon. Riparian areas are lands adjacent to rivers, streams, and estuaries. This study identifies concerns among citizens about the substance of proposed changes to riparian area management, as well as the process used to develop the changes. LINCS (Learning-oriented, Interactive, Non-competitive, Collaborative, Systemic inquiry) theory is used to develop and implement a supplemental public participation technique known as PLACE (People Learning About People and Environment) mapping. This study describes the design and implementation of the PLACE mapping technique within the volatile, emotional atmosphere surrounding riparian action planning in Tillamook County, Oregon.
The purpose of this research is to determine if the PLACE mapping technique generates learning among participants.

1.2 SETTING

Tillamook County is located on the Northwest Oregon Coast approximately 70 miles west from Portland. Known as the “home of cheese, trees, and ocean breeze,” citizens often joke that the county’s bovine population of 30,000 outnumbers the people – approximately 24,000. The catchy marketing phrase “home of cheese trees and ocean breeze,” which is seen on all official Tillamook County stationary, is a clear reminder to citizens and visitors of what many in Tillamook see as the essential attributes to the quality of their economic and personal lives.

The large bovine population supports an important dairy industry that counts among its accomplishments “world famous” Tillamook cheese. The Tillamook Cooperative Creamery Association is the county’s largest employer with 360 employees. Nearly 90% of the total 1,125 square miles in Tillamook County are considered forestland. The vast forest resources support the activities of the other two largest employers in the county – Tillamook Lumber Company and Trask River Lumber Company with 160 and 140 employees, respectively. Proximity to the Pacific Ocean is an important factor to the quality of life and also to the largest segment of the local economy – tourism. Approximately 25% of the jobs in
Tillamook County are related to tourism (Southern Oregon Regional Services Institute 1996, as cited in TBNEP 1999).

Tillamook is home to seven large rivers and hundreds of tributary rivers and streams, making riparian areas a common part of the landscape and a valued component on the land of many property owners. The seven large rivers in Tillamook County, the Miami, Kilches, Wilson, Tillamook, Trask, Nehalem, and Nestucca, are remarkable for their aesthetic appeal and dynamic force. The headwaters of six of these seven rivers exist within 25 miles of the ocean. In an area that experiences an average of 88 inches of rainfall per year, the water that is transported in this short distance is astonishing, and at times results in significant flooding in the lower watershed.

The rivers in Tillamook County have, in the past, been home to abundant salmon populations that supported commercial fisheries and recreational sports fishing. In recent years, salmon populations have declined considerably. The decline of salmon populations in the coastal rivers is a primary factor in the current debate about riparian protection in Tillamook County.

1.3 CONFLICT

In the fall and winter of 1999-2000, several forces collided, creating a dynamic political climate that would change public participation in policy development in Tillamook County. First, the National Estuary Program completed its five-year study of water quality in the Tillamook Bay and published the

*Tillamook Bay Comprehensive Conservation and Management Plan (CCMP).*
Second, the Tillamook County Futures Council completed its comprehensive study of perspectives among Tillamook County residents and created what is known as *The Big Book*, or *The Vision*. Third, the National Marine Fisheries Service (NMFS) held public hearings throughout the Pacific Northwest to get input on a preliminary draft of its "4(d)" rule. And finally, the Tillamook County Department of Community Development (TCDCD) undertook its periodic review of land use ordinances and drafted a revised riparian protection ordinance.

The proposed ordinance created an immediate and well-organized reaction among landowners who felt threatened by restrictive language in the proposal. The ensuing public outcry in media outlets and hearing processes demanded better citizen participation in action planning and led to the creation of a citizen Riparian Advisory Committee. The relationships between each of these events and the subsequent citizen involvement will serve as the backdrop for a discussion of public participation in riparian action planning.

![Flow Chart of Conflict Development](image)

*Figure 2. Flow Chart of Conflict Development*
1.3.1 The Tillamook Bay National Estuary Program

The Tillamook Bay National Estuary Program is one of 28 National Estuary Programs around the United States that was funded by the United States Environmental Protection Agency as part of the Clean Water Act. "The mission of the National Estuary Program is to protect and restore the health of estuaries while supporting economic and recreational activities" (TBNEP 1999: 1-3). The Comprehensive Conservation and Management Plan represents findings of research conducted as part of the project and "sets forth a 10-year action plan to coordinate resources, strengthen commitments, and rededicate [community] resolve to protect and enhance Tillamook Bay's natural resources." (TBNEP 1999: 1-2).

The CCMP identified five "priority problems" — Key Habitat, Water Quality, Erosion and Sedimentation, Flooding, and Education and Outreach. It addresses concerns such as high stream water temperature, high incidence of fecal coliform, sediment deposition, and flooding. The influence of specific action items generated by the CCMP figures prominently in the current debate over riparian protection.

The CCMP produced the Tillamook Bay National Estuary Program Action Plan. This plan calls for 62 coordinated goals, objectives, and distinct actions that its authors believe will contribute to the restoration of the Tillamook Bay and Watershed (TBNEP 1999: 1-8; TBNEP 2000: 9). "Using citizen input and cost vs. benefit analysis," the Tillamook Bay National Estuary Program (TBNEP) Management Committee identified and ranked "high priority actions" (TBNEP 2000: 9). Among the "high priority" actions in the "Key Habitat" section is Habitat
Action HAB-15 – “Revise Local Ordinances to Increase Protection of Riparian Areas, Wetlands, and Instream Habitat” (TBNEP 2000: 10). This “Key Habitat” action item is informed by the belief that “removal of riparian vegetation increases stream temperatures, reduces refuge, and depletes food sources” and that these factors have “contributed to decreased habitat quality and declining salmon and trout runs” (TBNEP 2000: 5).

1.3.2 The Tillamook County Futures Council

In the fall of 1997, the Tillamook County Commissioners appointed twelve area residents to form the Futures Council. The Commissioners asked the Futures Council to create a process that would allow citizens from a wide range of backgrounds and interests to develop a “long-range vision” for development in the county. With the help of a team of faculty and graduate students from the University of Oregon Community Planning Workshop, the Futures Council involved more than 1,200 individuals in the effort through public meetings and survey participation. The results of this effort are combined in a document known as The Big Book. The Big Book (TCFC 1999) outlines 19 goals and 52 strategies for guiding development in the county over the next 20 years.

The Futures Council developed goals and strategies through information provided by a survey that was mailed to 4,000 randomly selected Tillamook County Peoples Utility District customers. The questions for the survey were
created after 17 focus group sessions were held to learn about the issues important to citizens in Tillamook County.

Like the CCMP, The Big Book divides goals and strategies into four categories. The categories that the Futures Council chose to identify are 1) Growth and Development; 2) Natural Environment; 3) Economy; and 4) Society and Culture. Two responses in the Natural Environment category are of particular interest when attempting to understand riparian action planning efforts. The second and third highest ranked goals, goals 2.1 and 2.4, respectively, relate directly to the development and review of riparian protection. Goal number 2.1 is based on affirmative responses to the statement of future condition that “waterways are managed to protect riparian zones and provide high quality habitat for native fish and wildlife” (TCFC 1999: chapter 8, table 8.4). 87% of respondents to the Futures Council survey indicated that this future condition was either “important” or “very important.” Goal number 2.4 is based on affirmative responses to the statement of future condition that “wild salmon and steelhead populations are restored as integral, fully functioning components of our watersheds” (TCFC 1999: chapter 8, table 8.4). 86% of respondents to the futures council survey indicated that this future condition was either “important” or “very important”.

1.3.3 The National Marine Fisheries Service

In the fall and winter of 1999/2000, the National Marine Fisheries Service (NMFS) conducted an extensive public comment process in which they heard from
residents throughout the Pacific Northwest about concerns and issues related to the protection of “threatened and endangered” salmonid species and their essential habitats. The public comment sessions were highly visible in the media in the Pacific Northwest as activists from a wide range of interest groups rallied their constituents to protest what were perceived by some as inadequate protections and by others as onerous and unnecessary. There was extensive coverage of the process in newspapers and radio media around the state including three newspapers commonly found in Tillamook County – The Capital Press, The Oregonian, and the Tillamook Headlight Herald. Editorials and letters to newspapers were common, as was general knowledge about the debate surrounding riparian “buffer zones.”

On January 3, 2000 the National Marine Fisheries Service published the proposed “4(d) rule” for seven Evolutionarily Significant Units (ESUs) of “wild salmonid” populations. The Oregon Coast Coho is the most significant of these endangered ESUs for Tillamook County. The 4(d) rule “prohibits anyone from taking a listed salmon or steelhead except in cases where the take is associated with an approved program” (NMFS 2000: 1). “Take” is defined in the Endangered Species Act as “harass, harm, pursue, hunt, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct” (Endangered Species Act: section 3[19], as cited in NMFS 2000: 3). The 4(d) rule allows public and private land managers to apply for “take” prohibition limitations under the Endangered Species Act. Successful applicants for limitations to the “take” prohibitions assure managers
...that their activities, when implemented in accordance with the criteria in the 4(d) rule, do not violate take prohibitions and will not be subject to enforcement actions” (NMFS 2000: 3). Many people involved in these discussions refer to a 4(d) limitation as a “get out of jail free” card because it insulates land managers from National Marine Fisheries Service enforcement actions.

1.3.4 Land Use Goal # 5 Periodic Review / Draft Riparian Ordinance Overlay

The development of the CCMP, The Big Book, and the extensive public hearing process associated with the formation of the National Marine Fisheries Service 4(d) rule corresponded with the Tillamook County Department of Community Development’s periodic review of its state land use Goal #5 ordinances. Due in part to the explicit guidance given in the CCMP “Key Habitat” action #15, “Revise Local Ordinances to Increase Protection of Riparian Areas, Wetlands, and Instream Habitat” (TBNEP 2000: 10), the Department of Community Development undertook to re-write local riparian ordinances. A Department of Community Development employee stated in a February 2, 2000 hearing before the Tillamook County Board of Commissioners that:

“In general, dwindling salmon runs, frequent flooding, and increased water quality concerns in Tillamook County brought about added attention to streams and streamside areas. And, most particularly, this has been an issue that was considered by the National Estuary Process in Tillamook County over the last five or six years. The resulting plan that emerged from that, the Performance Partnership CCMP, includes a number of high priority goals and actions that mandate increased protection of riparian areas including specific direction to my department to revise local ordinances to increase protection of riparian areas. That’s why we did this! [created a draft
ordinance] That’s why we did it at least now. It was going to have to be done sooner or later but we did it because of that specific direction” (TCDCD Employee).

In responding to a question from a Commissioner about why this matter was coming before the board at this time, the employee emphasized the perceived need to accomplish this task locally and in a timely manner. Some residents involved in this debate believed that state and federal governments would enforce very restrictive regulations in communities that did not address issues of riparian area protection themselves. The Community Development Department employee further stated:

“At this time, because of the specific directive from the CCMP, but also because with respect to state land use planning requirements.... The ordinance was developed locally to describe flexible protections for riparian ordinances in the face of potentially rigid state and federal mandates. My concern is with respect to what NMFS is doing, relative to the Endangered Species Act, taking of endangered species by reducing habitat, that there is very clear direction that we have a choice. We can do it locally [create regulations] in a way that's as flexible as possible and attentive to local concerns, or later it will be done for us by people who are not so sensitive to that. It's both local direction and a sense that riparian concerns are out there and we need to address them” (TCDCD Employee).

In a letter dated June 7, 2000, an employee of the Department of Community Development told the Riparian Advisory Committee that, “Personally, [he] was satisfied with the current ordinance,” but then presented a list of reasons why the Department of Community Development drafted a new ordinance (TCDCD 2000b: 1).

The first item on this list was “strong support for riparian protection in the Futures Council’s surveys.” Next, he listed specific direction from the CCMP and
concerns about compliance with federal regulations under the Endangered Species Act. The letter goes on to discuss specific issues that were raised by community members in response to the draft ordinance. One of these points, was the “lack of sufficient public participation in the development of draft before there was public notice” (TCDCD 2000b: 3)

In fact, the first thing that many landowners learned about the proposed ordinance revision came in a notice from the Tillamook County Department of Community Development in late December 1999. The very first sentence in the notice was alarming and instantly put landowners on the defensive. Using specific language required by Ballot Measure 56, it stated in bold type, “This is to notify you that Tillamook County has proposed a land use regulation that may affect the permissible uses of your land” (TCDCD 1999: 4) Voters passed ballot Measure 56 in 1998 requiring “... counties and cities to mail notices to landowners regarding changes to state, local, or metropolitan service district land use laws and regulations that limit or prohibit uses currently allowed on the landowners' property” (Oregon Secretary of State 1998).

The notice from the Tillamook County Department of Community Development went on to inform landowners that:

“As a result of an order of the Land Conservation and Development Commission, Tillamook County has proposed ORDINANCE AMENDMENT OA-99-07 (PERIODIC REVIEW: RIPARIAN OVERLAY ZONE): to amend the Tillamook County Comprehensive Plan to include new and/or revised inventory, analysis, findings and policies relating to waterbodies and riparian areas, and to amend the Tillamook County Land Use Ordinance to delete the existing section 4.080 (Requirements for Protection of
Water Quality and Streambank Stabilization) and replace it with the proposed Section 4.080 (Riparian Overlay Zone), and declaring an emergency” (TCDCD 1999: 4).

The notice states that “the following language is required by Ballot Measure 56…

‘Tillamook County has determined that the adoption of this ordinance will affect the permissible uses of your property and may reduce the value of your property’” (TCDCD 1999). The very next sentence, however, states: “In fact, the proposed ordinance may or may not affect permissible uses on your property and may increase or decrease property values, or have no effect, depending on a number of factors” (TCDCD 1999: 4).

The notice provides ten “bullet points” of statements about land covered by the ordinance and general descriptions about what the ordinance would do. The next paragraph states: “The above description of the proposed ordinance amendment and its effect on property may change prior to its adoption as the Planning Commission and the Board of County Commissioners take into account testimony and evidence from public and county staff” (TCDCD 1999: 4).

Landowners were encouraged to attend public hearings and were informed that revisions to the proposed ordinance were possible. The notice then informed landowners that “Ordinance Amendment OA-99-07 will (emphasis added) become effective upon adoption by the Tillamook County Board of County Commissioners, which will (emphasis added) occur on February 2, 2000” (TCDCD 1999: 4).

Landowners were informed that the first public hearing would be held before the Planning Commission on January 13, 2000.
Copies of the proposed riparian ordinance were available from the Department of Community Development office or on the Tillamook County website, www.co.tillamook.or.us. The 12-page document gave a brief statement of the scope of the ordinance amendment followed by the specific definitions and guidelines associated with stream types, buffer zones, debris, restricted and permissible activities within buffer zones and permit processes. The statement of purpose read:

"The purpose of this ordinance is to protect and restore waterbodies and their associated riparian areas, thereby protecting and restoring the hydrologic, ecologic, and land conservation functions these areas provide. The desired state of these areas is the Healthy Riparian Condition..."(TCDCD 2000a: 1).

The ordinance outlined an extensive definition of “Healthy Riparian Condition” that included reference to: structure and composition, vegetation, width and function, shading, floodplain connectivity, and bank stability. The statement of purpose went on to read:

“The ordinance is specifically intended to protect habitat for fish and other aquatic life, control erosion and limit sedimentation, and reduce the impacts of flooding. It is also the purpose of this ordinance to protect development from erosion and flood hazard, while avoiding structural bank stabilization to the extent possible. Streams and other waterbodies are dynamic systems; by developing near them landowners are accepting a degree of risk. Therefore another purpose of this ordinance is to educate and inform landowners and make them responsible for their actions. Development is encouraged to be away from rivers and floodplains. This ordinance attempts to meet the goals listed above by excluding development from buffer zones around lakes, streams, estuaries, and associated wetlands and by prohibiting vegetation removal or other alterations in those buffers. For cases of hardship the ordinance provides a procedure to reduce the riparian buffer. Alteration of the
1.3.5 Citizen Involvement

Figure 3. Flow Chart of Citizen Involvement

Reaction to the proposed ordinance was immediate and intense. Citizens seemed to pay particular attention to the sentences in the statement of purpose that read:

“This ordinance attempts to meet the goals listed above by excluding development from buffer zones around lakes, streams, estuaries, and associated wetlands and by prohibiting vegetation removal or other alterations in those buffers....” (TCDCD 2000a: 1).

In the absence of opportunities for open public communication and learning, a variety of public forums became inundated with position-driven monologues. Without an opportunity for learning, citizens reacted with fear to their
interpretations of what the draft ordinance would restrict in riparian areas. In the early stages of citizen “outcry,” a letter appeared in the local newspaper, *The Tillamook Headlight Herald*, that described a variety of negative outcomes that would occur as a result of the draft ordinance.

"[The ordinance] increases the setback from the water substantially, it does not allow for any usage of your property in the riparian zone, it doesn’t even allow for paths to access the water frontage. You would not be able to trim trees, remove blackberries, or any noxious weeds from certain zones of your water frontage. ... Overall, the new ordinance restricts our property rights tremendously. It affects property values negatively, and mostly it is not based on scientific evidence. It is based on enforcement and regulation, rather than encouraging proactive responsible behavior of landowners..." (*Tillamook Headlight Herald*, Letter to the Editor January 19, 2000).

Statements like these increased the tension between people who felt threatened by these outcomes and those who interpreted the ordinance differently. This resentment is clear in a statement made by an employee of the Community Development Department when commenting at a Board of Commissioners meeting.

"I came to the conclusion this morning after I read the paper again that perhaps we have actually two ordinances out there -- the one we prepared and the one that’s being responded to. And I hope we can reconcile any sense of misunderstanding on this.... Because obviously we have a situation that when I read the ordinance and when (other planning staff) read the draft ordinance we get one impression of what’s intended and how it would work and from what I am reading in the paper some folks are getting a quite different impression of what’s intended and what would result from it" (TCDCD Employee).

The employee of the County Planning Department remarked later in the same meeting that:
“I just want to say from a personal perspective – if much or most of what I heard….about the ordinance is true, I would be opposed to it. I have a stream that goes through my property. I am sitting here listening and I am thinking that people who have not read or do not understand the ordinance, if they hear this and they hear the representations and concerns that have been expressed, they have every right to be fearful about this…. I think there is a substantial job that needs to be done to get clear on exactly what is being proposed, why it is being proposed, and what the alternatives might be” (TCDCD Employee).

Letters to the *Headlight Herald* and comments made at public hearings about the proposed ordinance illustrate the tension that developed as a result of inadequate community dialogue. The majority of comments in the public record concerning the proposed ordinance document the threat that citizens perceived about losing their property rights. This perceived threat led landowners to articulate their mistrust of government and their strong desire to be involved in the process of policy development.

### 1.3.6 Mistrust of Government

Mistrust of government quickly emerged as a primary theme among many citizens who sought to generate opposition to the proposed ordinance. Comments such as, “Clearly, our private property rights are under assault by federal, state and local governments” were intended to create intense reactions among sympathetic citizens. Much of the initial public response appeared in the form of efforts to rally opposition to the ordinance. There was a belief among many landowners that “bit by bit” regulations would erode their property rights and that the citizens needed to act together to fight unjust actions taken by the government. While testifying
before the Board of Commissioners, one woman spoke as though she were actually addressing the crowded room of citizens when she said:

“My concern is about government incrementalism.... little by little, your rights are taken away. They change your property use, and they wait until you get used to it—it’s just a little step—you think, ‘oh, well, what the heck’—and pretty soon you don’t have any property rights....” (County Resident).

In the context of these statements, “they” is government, and the “you” and “your’ are property owners. These comments are made to inform other landowners of the enemy – “they” – and define the danger of inaction.

At a Tillamook County Landowners Association meeting, a speaker told a crowded room of landowners, “We must work together to stop this creeping incrementalism—this ‘divide and conquer’ approach.” Another landowner summed up his concerns and interest in organizing opposition like this:

“You think you own the land that you have your house on. You don’t. All you have is what’s called a bundle of rights to that land... And what the government is doing under the police powers, they’re taking away some of those rights...because there are some who would like you to have only one of those rights left—and that’s the right to pay taxes. I’m afraid we have moved from a free country with prohibitions against doing illegal things, to a country...where the government grants you a few rights, and when they do that they can take them away at any time. We need to organize to protect our property rights, because this country is strong because we do have as individuals the right to use the property the way we want to, as long as it’s not being abusive to our neighbors” (County Resident).

Property rights advocates were very clear about their mistrust of government and their perceptions of the negative outcomes that would result if the proposed ordinance were adopted. One member of the Tillamook County Landowners Association addressed a crowded room with the statement:
"This issue of riparian setbacks is a smoke screen to take control of your land. Period. No ifs, ands, or buts about it. It’s not right, it’s not fair, and it’s not democratic" (County Resident).

In a public hearing before the Board of Commissioners, a comment that drew raucous applause was made by a gentleman who compared the effects of the proposed riparian ordinance to stealing. He said:

"I bought my property 28 years ago and paid on it for 18 years — striving — it was hard work. And now the government is going to come in and take part of it and say it’s theirs. To me this is taking control of land that is on my warranty deed. So this is a pernicious thing to me. Its thievery disguised as government" (County Resident).

This sentiment was shared by many. In the February public hearing, another county resident said, "Government is into our lives so much that one of our last strongholds is our property and I hate to see those rights taken."

There was a strong sense that the government was acting outside of its mandate to protect its citizens. The following statements illustrate the competitive, divisive nature of the public comments:

"What was your feeling when you left the planning meeting where the planners unveiled their new stricter riparian setbacks? Did you have that "warm-fuzzy" feeling that you were being well protected? Or did you have the feeling that—again—you were being ‘taken’?" (County Resident)?

"I am here as a wife, a mother, and a landowner on the Trask River. In the Constitution and the Bill of Rights we are guaranteed life, liberty, and the pursuit of happiness. When my husband and I decided, nine and a half years ago to move from Portland to Tillamook, it was with the idea of providing a better environment for our children. . . . When the ordinance comes up and threatens the restriction of my children, my family, myself, my husband being able to go within 75' of that river, that impedes our pursuit of happiness" (County Resident).
"I am beginning to believe that 50 years from now the concept of private property will no longer exist, as the state will control all the land and the people will have to apply for a license to live on it" (County Resident).

“Our only solution to the escalating attempts to control our every movement is to stand up and just say 'no' whenever we are being unjustly manipulated....” (County Resident).

These statements illustrate the intense mistrust of government that became apparent as a result of this issue. The tone created tension and defensiveness among landowners and government officials. On the morning of February 2, 2000, the Tillamook County Commissioners room was bursting with citizens hoping to comment on the proposed ordinance. Despite efforts to keep the mood constructive, it did not take long for the Commissioners to feel that they were under attack from the citizens who blamed them for creating and supposedly supporting the ordinance. The many comments directed at the Commissioners prompted one Commissioner to respond:

"I think it needs to be clarified that this is not a Commissioners' ordinance. We did not create this or bring this up; we are merely here to listen to what is being proposed.... If you want to get mad at the Commissioners for creating this, excuse me - personal opinion - you're barking up the wrong tree" (County Commissioner).

1.3.7 Desire for Citizen Participation

The February 2, 2000 hearing before the Board of Commissioners was the first opportunity for citizens to vent their frustration before the governing body that would make the final decision about adoption of the ordinance. Many of the issues of concern that had been articulated in the media were reiterated at the hearing.
Several speakers were extremely articulate with well-prepared and well-researched comments. Others spoke spontaneously, but made their points. A new dimension to citizen concerns was articulated at the Commissioners’ meeting. Citizens continued to implore fellow landowners to join forces to stop the egregious acts of government, but a significant number of speakers also expressed a desire to create better processes for citizen participation in the County.

One of the first people to speak was a representative of the Tillamook County Landowners Association. He spoke about a wide range of issues that outlined the desire of the group to be involved in this and other land use issues, what they would support, and a host of reasons why they did not support the draft riparian ordinance. In his opening comments he stated:

“Tillamook County Landowners Association is a group of individuals who represent a broad variety of landowners and other residents in Tillamook County whose economic well being is dependent in part on maintaining the value of their property. The Tillamook County Landowners Association supports comprehensive, scientifically based, and cost effective management measures to protect natural resources. We also will participate actively in the public involvement process and other governmental processes involving land use and water related issues in Tillamook County of common interest to the members and promotes scientific-based solutions to the problems surrounding their use. The Tillamook County Landowners association will promote solutions, which are compatible with good stewardship of our natural resources while preserving private property rights and values. The Tillamook County Landowners Association opposes the ordinance amendment 99-07 section 4.080 riparian overlay zone dated January 5, 2000” (Tillamook County Landowners Association Representative).
Citizens made strong statements about their intentions to be involved in future land use policy processes. Citizens suggested to their elected officials that they think in new ways about citizen involvement.

A major issue raised by the representative of the Tillamook County Landowners Association concerned the lack of citizen involvement in the development of the draft riparian ordinance. He stated:

"Goal 1 of the statewide planning goals and guidelines is 'citizen involvement.' Goal 1 states that 'the citizen involvement program shall be appropriate to the scale of the planning effort. The program shall provide for continuity of citizen participation and of information that enables citizens to identify and comprehend the issues.' The proposed riparian ordinance affects approximately half of the private property in the county.... The scope of this ordinance demands a large countywide input; something that has been overlooked.... Why did it happen this way? With the direction expressly written out and certain procedures to follow mandated by OAR 660-23 and statewide planning goals and guidelines from the LCDC, why are we here? We should not have to be put in a position to tell the planning department to follow its own rules.... These are laws that will effect the county for years to come. They must be developed in an open atmosphere" (Tillamook County Landowners Association Representative).

Citizen involvement was an issue that concerned many people who spoke at the Commissioners meeting on February 2, 2000. One citizen brought a petition to the Commissioners’ meeting that was signed by 650 property owners and residents opposing the proposed riparian ordinance. He asked the Commissioners to "direct the department of Community Development to work with the Tillamook County Landowners Association as a committee for citizen involvement.... to redraft a consensus ordinance that meets the standards prescribed by law and incorporates citizen involvement required by Goal 1" (County Resident).
Another citizen that addressed the Commissioners indicated that she was one of the few people who had been involved in the drafting of the ordinance. She stated that she was alarmed at the lack of attention the planner gave to the issues that she and others brought up during that time. She stated:

"I was one of the very few citizens who was involved in the preliminary and drafting stages of this ordinance. Unfortunately there were not many other citizens involved. However, if there were I'm not sure it would have done much good. We discussed many of the issues that you are hearing now. Certainly not all of them or in as great of depth, however these issues were brought up to the planner at hand and unfortunately none of these concerns were taken to heart. The way it was presented was just that. It was presented to the citizens. It was not presented in a manner to include our comments but rather for us to be educated of what this new ordinance would be" (County Resident).

Another resident who was interested in participating and seemed frustrated about the opportunities available stated:

"I have to get out of here because I have to work for a living. I would sure like to see some meetings held at night; 5:00, 5:30, 6:00. There's a lot of people who would like to be at these meetings who can't because of time" (County Resident).

Another person, following an articulate monologue about the relationships between riparian areas and a wide range of issues from flooding to seal populations, stated with a tone of disgust in her voice:

"As in the past, I'm sure a new committee is going to be appointed to review this meeting and what has taken place today. The people who own waterfront property in this county need to be heard! Not as in the past when meetings were held, lip service was given to the people, and then rules made to fit bureaucrat criteria" (County Resident).
In fact, during the February 2, 2000 hearing, one of the Commissioners referred repeatedly to a "collaborative process" that would be developed and that would include citizens from a wide range of perspectives. In late March, the Commissioners asked for applications from people who would be interested in participating in a citizen advisory committee that would evaluate riparian protection and make recommendation to the County Commissioners. In mid-May, the list of 20 appointees to the volunteer Riparian Advisory Committee was printed in the *Tillamook Headlight Herald*. This is where the PLACE mapping technique began to take shape.
2.1 LEARNING FROM LOCAL KNOWLEDGE

"Any approach to rational intervention in human affairs has to accept that in studying purposeful human action and in trying to bring about change in human situations, it is not simply a matter of setting to work to discover ‘laws’ governing the phenomenon in question.... The would-be rational intervener in human affairs cannot separate theory and practice in the way that the natural scientist can. Such intervention requires a steady interaction between theory and practice in a process of inquiry” (Checkland 1985: 757).

In complex situations such as riparian action planning, it is necessary to allow the relationships between theory, elements of significance, and methodology to simultaneously emerge and inform one another. As Fred Kofman and Peter Senge write, “Real learning occurs over time, in a continuous cycle of theoretical action and practical conceptualization” (Kofman and Senge 1995: 17). A process of learning what the elements of a situation are, and how they interact and are related to one another must inform policy needs. In his discussion of Peter Checkland’s inquiry into “human activity systems” Jim Underwood writes:

“Formal methods usually begin with a problem statement; Checkland found that fixing the problem too early made investigators unlikely to see different, possibly more basic, problems. And the method itself restricted what could be found out....” (Underwood 1996: 1).

By including citizen concerns and interests, research, and data in developing policy needs, citizens and policy makers have an opportunity to learn from one another before policy targets are developed. Locally appropriate targets can be established
and the context for meaningful community discussion about pathways is improved by adopting a process that includes systemic inquiry among interested parties.

In the past, anthropologists have used ethnographic methods to help managers implement development goals in ways that are sensitive to the needs of local communities. This orientation toward implementation, however, assumes that the goals that have been defined are appropriate to the community system that will be impacted.

In discussing the use of anthropological tools for use in the National Park Service, Muriel Crespi wrote,

"Ethnography, as a component of Social Impact Assessments . . . yields data on otherwise undetectable community perceptions and dynamics that can block rather than support the best intentioned plans. By also revealing the rational basis for community responses, ethnography produces data needed for correcting plans so they are more culturally appropriate and locally acceptable" (Crespi 1987: 1).

The language used to describe the value of ethnographic methods, a primary tool in the tool kits of anthropologists, illustrates the limited scope of its perceived application. That ethnography can yield data about perceptions that may block well-intentioned plans is not in question, but it can also yield data that will help managers learn what appropriate goals are before plans are made. A social impact assessment is a reactive rather than proactive study. The need for a social impact assessment is applicable only after policy goals are established.

In the past, anthropological research has been used to help policy makers learn about "local knowledge" in order to avoid implementation conflict, but anthropological methods can also be used by policy makers learn from "local
knowledge.” The distinction between learning about local knowledge and learning from local knowledge is important. Traditionally, public participation has been interested in learning about local knowledge in order to more effectively and sensitively implement the goals of a policy. If goals are already in place, managers are only looking for pathways to get from point A to point B. The value of learning from local knowledge is that locally appropriate policy targets that reflect diverse values and needs can be defined with a better understanding of the situation. These are important distinctions that could fundamentally transform the way policymakers and citizens view and manage their relationships with one another.

Ongoing analysis and regeneration of methodological tools and continuous data collection will enhance the ability of citizens and policymakers to be well informed about policy needs. By focusing on learning rather than explanation, position advocacy, or problem solving, citizens, agency managers, and policymakers will be empowered to collaboratively identify appropriate targets and create improvements in contentious situations.

2.2 CREATIVITY

“Why do we confront learning opportunities with fear rather than wonder? Why do we derive our self-esteem from knowing as opposed to learning? Why do we criticize before we understand? Why do we create controlling bureaucracies when we attempt to form visionary enterprises? And why do we persist in fragmentation and piecemeal analysis as the world becomes more and more connected?” (Kofman and Senge 1995: 15)
Kofman and Senge argue that "the main dysfunctions in our institutions—competition, fragmentation, and reactiveness—are actually the by-products of our success over thousands of years in conquering the physical world and in developing our scientific, industrial culture." Thus, they say, "it should come as no surprise that these dysfunctions are deeply rooted" (Kofman and Senge 1995: 16). Our constructions of the policy process and our current modes of interaction within the policy arena are contemporary reflections of past successes and failures in our lived experience. As David Kolb states: "Our species long ago left the harmony of a nonreflective union with the 'natural' order to embark on an adaptive journey of its own choosing. With this choosing has come responsibility for a world that is increasingly of our own creation...." (Kolb 1984: 2).

Margaret Mead celebrated the human capacity for cultural construction and creativity when, in 1935, she wrote: "We cannot but be impressed with the many ways in which man has taken a few hints and woven them into the beautiful imaginative social fabrics that we call civilizations" (Mead, as cited in McGee and Warms 1996: 215). In this statement, Mead expresses the limitless possibilities for cultural variability, suggesting that humans are acting on their own, making for themselves "a fabric of culture within which each human life was [is] dignified by form and meaning" (Mead, as cited in McGee and Warms 1996: 215).

When considering policy development, it is important to keep in mind that the policy arena is a socially constructed institution and therefore subject to cultural reflection and change. It is an institution that reflects the creative capacity of
humans to manufacture mechanisms that respond to mutable social needs and
maintain mutable social norms. Richard Chaney contributed to this discussion
when he wrote: "While the order of nature is given and man only assigns meaning
to it, the orderings of our lived experience are not given but display how humans
have created the forms of moral and aesthetic orderings in our lives" (Chaney 1991: 13). Through the adoption of public policies, federal, state, and local policy makers
are responding to the changing "moral and aesthetic orderings" in the lives of the
public whom they represent and serve.

Kofman and Senge speak to the issue of creativity and the perils of
preserving status quo when they write:

"We invent structures and distinctions to organize the unimaginable
flow of life. That organization allows us to operate effectively, but
it can become a tranquilizing barrier to exploration and creativity.
The more efficient a model of the world turns out to be, the more it
recedes onto the background and becomes transparent. The danger
of success is that the thinking behind it can become entrenched and
disregard the necessary context of its effectiveness. When a model
loses its 'situation' and generalizes its validity to universal
categories, it sooner or later stalls our capacity to deal freshly with
the world and with each other" (Kofman and Senge 1995: 30).

These tranquilizing barriers occur when thinking becomes static and we passively
apply old patterns of thought to new, dynamic situations. Dave Bella writes:

"Behaviors that tend to persist (keep coming up) do so because they have reasons
that make sense to those acting out those behaviors...behaviors that tend to persist
have consequences that tend to persist" (Bella 2000: Preface). Bella continues:

"... complex problems can emerge and continue through the normal and well-
adjusted behaviors of ordinary people. There are few things that can hide and sustain a problem as well as normalcy” (Bella 2000: 6).

In order to address systemic dysfunction, it is important to comprehend what the system or systems in question are. Michael Knapp (2001) illustrates some common systemic behaviors that lead to persistent problems and complexity in traditional public participation models. In the diagram in figure 4, lessons become clear by saying, “therefore” when reading in the direction of the arrows, and by saying, “because” when reading in the opposite direction of the arrows. The illustration demonstrates that people behave the way they do for reasons that make sense to them. Those reasons, however, can be obscured to others in the absence of learning opportunities.
Figure 4: Patterns of Public Testimony. Describes reasons for dysfunctional behavior. Say “therefore” when reading in the direction of the arrow and say “because” when reading opposite the direction of the arrow (Knapp 2001: 25).
Complex situations may be improved by reflecting on the failures of status quo and creating new mechanisms that respond to current circumstances. As Chaney writes, “...the true nature of Enlightenment is not merely to be found in its products but rather in its process of doubting and seeking, of tearing down and reconstructing” (Chaney 1991: 9). Lessons learned during the scientific enlightenment, in which skepticism about the humanly constructed knowledge of the past was questioned, deconstructed, and reconstructed, are pertinent to contemporary policy development. In his discussion of the scientific enlightenment, Emanuel Kant stated:

Enlightenment is man’s exodus from his self-incurred tutelage. Tutelage is the inability to use one’s understanding without the guidance of another person. This tutelage is self-incurred if its cause lies not in weakness of understanding, but in indecision and lack of courage to use the mind without the guidance of another....” (As cited in Chaney, 1991: 10).

Kant’s words speak directly to the necessary predicament of practitioners as they explore the possibilities, limitations, and usefulness of creative new techniques to facilitate community learning.
2.3 LINCS

LINCS (Learning-oriented, Interactive, Non-competitive, Collaborative, Systemic inquiry) encompasses essential components needed to improve the quality of public participation in policy development. Learning is essential to improve community understanding of a situation. A non-competitive atmosphere, collaboration, interaction, and systemic inquiry are qualities of public participation needed for learning to occur.

2.3.1 Learning and Interaction

Learning through interactive and creative processes of civic discovery that value the diverse experiences of citizens must be central features of public
involvement efforts in policy development. Kolb defines learning as “the process whereby knowledge is created through the transformation of experience” (Kolb 1984: 38). Civic discovery is defined by Robert Riech as “constructive public deliberation; where opinions can be revised, premises altered, and common interests discovered” (As cited in Walker and Daniels 1994: 11). The freedom to collaboratively construct new ways of knowing and behaving through the experience of communicating knowledge from one’s lived experience is essential in the process of learning. People learn through experience and create knowledge through interaction with others. The interconnected, and at times imperceptible events of action, observation, reflection, and behavior modification are the basis for cultural change.

Hyerle’s (1996) conclusion that humans have the ability to transform their current modes of representation to increase thinking and learning is a strong foundation for practitioners hoping to facilitate learning. Additionally, Kolb’s interest in experiential learning provides insight into aspects of citizen participation in the development of policies that reflect changing social context. Kolb writes:

“Human beings are unique among all living organisms in that their primary adaptive specialization lies not in some particular physical form or skill or fit in an ecological niche, but rather in identification with the process of adaptation itself – in the process of learning. We are thus a learning species and our survival depends on our ability to adapt not only in the reactive sense of fitting into the physical and social worlds but in the proactive sense of creating and shaping those worlds” (Kolb 1984: 1).

Community dialogue that is based on the experiences of participants is essential to learning. For citizens to be honored collaborators in the process of
policy development, it is important that public involvement efforts find ways to incorporate knowledge that is created through experience. Kolb writes, ".... in the overeager embrace of the rational, scientific, and technological, our concept of the learning process was distorted.... We lost touch with our own experience as the source of personal learning and development...." (Kolb 1984: 2). Kolb believes that "the learning process must be reimbued with the texture and feeling of human experiences shared and interpreted through dialogue with one another" (Kolb 1984: 2). But, as Senge writes:

“Developing capabilities for real conversation is not easy. Most of what passes for conversation in contemporary society is more like a Ping-Pong game than true talking and thinking together. Each tosses his or her view at the other. Each then responds. Often we are preparing our response before we have heard the other person’s view....’Learningful’ conversations require individuals capable of reflecting on their own thinking” (Senge 1994: 18).

To create “learningful” experiences we must give participants opportunities to be active while interacting with others and reflecting on and evaluating their own experiences. “When people are given the opportunity to ‘do’ – to participate in tasks, to speak from their own experiences, to be ‘players,’ they are more likely to learn than when in relatively inactive or passive situations” (Walker and Daniels 1994: 13).

2.3.2 Non-Competitive

“In the early days of intellectual development, the sphere of knowledge was limited, and was more nearly within the compass of a single individual; and those who assumed to be wise men, or aspired to be thought so, felt the need of knowing, or at least seeming to know, all that was known as a justification of their
claims. So also there grew up an expectancy on the part of the multitude that the wise and the learned would explain whatever new thing presented itself” (Chamberlin 1890: 754).

The complex relationships that citizens concerned with riparian action planning have created with one another and with their environment are steeped in historical, cultural, economic, regulatory, and scientific factors. The issues of concern are devilishly complex. Any attempt at simplistic explanation would be futile and contribute nothing to situation improvements.

Dysfunctional public participation processes have emphasized expertise in policy development and marginalized learning. In the absence of a learning orientation, public participation in contentious situations has become competitive and reactive (Walker 2000; Daniels and Walker 2001). Participants often believe that they know “the” correct pathway to “solve” conflict and advocate for preferred solutions. This creates barriers to learning by reducing systemic inquiry. In this environment, fragmented, partial, and/or misleading information is produced and deliberations, and ultimately decisions, lack systemic context.

As Kofman and Senge state: “Overemphasis on competition also reinforces our fixation on short-term measurable results…. The quick fix mentality…. makes us ‘system-blind.’ Many of today’s problems come from yesterday’s solutions, and many of today’s solutions will be tomorrow’s problems” (Kofman and Senge 1995: 20). Kofman and Senge are critical of “solutions” because they are often responses to urgent needs that address acute symptoms and lack regard for larger systemic dysfunction. Barbara Shipka writes:
“Responding out of urgency tends to lead us to find a ‘cause’ where we can make a difference. The paradox is that most of the causes treat symptoms, rather than establishing, understanding, and impacting the roots of systemic problems” (Shipka 1995: 148).

In giving the proposed riparian ordinance “emergency status,” the Department of Community Development created skepticism among landowners because opportunities for public review and involvement were significantly reduced. The consequence was not only the indication that the ordinance reflected a “solution” to a previously defined “problem,” but it also created a sense of urgency on the part of some citizens to react quickly to the perceived negative impacts of the draft.

Inadequate public participation opportunities and deliberation under traditional public hearing processes have led to the development of widely divergent communities of interest in competition with one another in their appeals to government officials. Walker calls this phenomenon “Agency as Arbitrator” (Walker 2000). In hearings, the government body responsible for drafting some form of regulatory change invites input from “the public” on proposed changes. In these situations, interested parties make appeals to the decision making body to sympathize with their position. This situation contributes to position advocacy, which promotes competition. The longer the process goes on, the more entrenched position advocates become. Position advocates take extreme positions in these cases because experience tells them that some form of compromise will be drafted. If a compromise is to be drafted, then it makes sense to take a position as far from the middle as possible in order to gain ground. A competitive environment such as
this is unlikely to promote learning and the eventual compromise is not likely to satisfy anyone, thus disenfranchising those citizens who took time to participate.

As knowledge of the natural world increases, interpretations about the place of humans in it are becoming more diverse and contributing to daunting complexity. Attempts by any agency, researcher, interest group, or academic discipline to *explain* the complexity that exists in contentious issues such as those in Tillamook County seems presumptuous at best and arrogant at worst. Furthermore, it seems unproductive. Situation improvement occurs when interested parties use methods of collaboration that foster a non-competitive environment of mutual respect and exchange of ideas to achieve an understanding of relationships among inseparable, interdependent elements in complex systems.

**2.3.3 Collaboration and Systemic Inquiry Using Visual Tools**

Hyerle uses examples of such things as cave drawings, molecular structures, and flow charts to illustrate that “the depiction of ideas through visual forms has always been an elemental dimension of human culture” (Hyerle 1996: 9). This visual process of creativity is one way humans remember, communicate, and negotiate information – interactively manufacturing knowledge. Hyerle argues that due to the “overwhelming and ever-changing quantity of data” available through different and emerging technologies, that humans are “in the midst of a renaissance in the quality of how... information and knowledge are represented” (Hyerle 1996: 9). The way this abundance of information is communicated and negotiated or obscured and misrepresented is fundamental to the success of contemporary policy development.

The need to comprehend perceptions and contextualize complex issues is important in policy development. Diagramming engages citizens beyond the limitations of oral dialogue – it promotes dynamic and constructive group interaction, collaboration, and discovery – essential components to learning. Creativity and discovery, when based on collaborative exploration of diverse experiences are enhanced with visual tools. Hyerle suggests that visual tools are “showing potential for transforming how ideas, knowledge, dialogue, and meaning are created, communicated and assessed” (Hyerle 1996: 12).

Von Humboldt wrote more than two hundred years ago:

“Man lives with his objects chiefly....in fact, since his feeling and acting depends on his perceptions, one may say exclusively....as language presents them to him. By the same process whereby he spins language out of his being, he snares himself in it; and each
language draws a magic circle around the people to which it belongs, a circle from which there is no escape save by stepping out of it into another” (As cited in Chaney 1991: 1).

In complex situations with a wide diversity of perceptions, visual tools provide an alternative form of communication – a “language” that participants can “step into.”

Hyerle writes:

“Maps are primary guides in our lives: road maps, world maps, transit and subway diagrams, maps for exploring a museum or amusement park, weather maps, and even imaginary treasure maps. Of course as we consider geographic knowledge on a map we see key representations of essential connections among mountains, valleys, and river. Similarly, visual tools are used primarily to make and represent connections among ideas and concepts” (Hyerle 1996: 9).

Visual tools help people comprehend connections between the wide variety of elements in complex systems. This is a compelling reason to try their application in contentious policy situations. Hyerle writes: “If we believe that human perceptions and thought processes are highly interrelated, holistic, and nonlinear – as well as linear – then it makes sense that we have additional nonlinear ways of accessing, interpreting, communicating, and assessing the way we think” (Hyerle 1996: 12). Visual tools may be a way of encouraging a much deeper analysis of systemic issues in policy debates; transforming them into learning events. Again, Hyerle speaks to the possibilities presented by visual tools:

“Visual tools, in sum, expand our horizons and refocus our attention, moving us back and forth between auditory/written language and visual representations; between linear thinking and holistic nonlinear thinking; between isolated ‘bits’ of facts and patterns and interrelationships; and between list-like knowledge and evolving interdependent systems of learning” (Hyerle 1996: 12).
Whole systems inquiry is one approach to group learning that uses visual tools to broaden understanding of complex systems. In his discussion of participants working with a whole systems diagramming technique known as “river diagramming,” William writes: “It’s nearly automatic! Identifying principles of systems thinking within the context of participants’ diagrams provides a common framework as people grapple with complex issues or systems” (William 2000: 233). The use of visual tools facilitates the creation of a common framework from which people are able to share and explore their experiences. William’s “river diagramming” technique represents a powerful learning tool that enables people to communicate a range of assumptions and knowledge rapidly and assimilate points of influence or “leverage” in systems. The simple practice of drawing requires refinement of assumptions. To draw something or otherwise present it visually enables groups of citizens to engage one another in deliberation about the implications of factors important in a system that they collaboratively construct from experience.

Whole systems inquiry emphasizes that participants define and create the framework of their inquiry. By encouraging participants to create the “river diagram” the participants are free to define the context and boundaries from which they can begin their inquiry. The role of the facilitator becomes one of ensuring that points are understood and factors of influence or “leverage” are identified. The facilitator is taken out of the position of defining for participants the framework or context within which their comments must conform.
The methods developed and implemented in this study are informed by concepts of systems thinking as a way to facilitate a broad understanding of systemic relationships. By encouraging participants to interact and collaborate using visual tools, they will begin to "see or witness a functional or living system rather than a heap of facts or parts" (William 2000: 4). Because participants are in control of identifying what components are significant in the system, the potential for rich unexplored connections is enhanced.
CHAPTER 3: RESEARCH METHODS

3.1 RESEARCH METHODS

LINCS theory demonstrates important features of interaction that will improve consideration of complex issues and participation in action planning. Data were collected for this study by facilitating interaction among citizens as they shared their knowledge and experiences of local systems using the PLACE mapping technique. The technique incorporated essential features of LINCS theory. The technique used visual tools to increase interaction, collaboration, and systemic inquiry and decrease competition. The technique and methods of facilitation are built on concepts from whole systems inquiry (William 2000) and collaborative learning (Walker and Daniels 1994; Daniels and Walker 1996) and are discussed in detail in Chapter Four. While LINCS theory guided the development of the PLACE mapping technique, participant observation, and semi-structured interviews were used initially to learn from the community in order to appropriately implement the PLACE mapping project.
3.2 THE PLACE MAPPING PROJECT

3.2.1 Identifying an Appropriate Research Situation

I conducted research on the statewide public processes related to forest management planning in the Tillamook State Forest for four months prior to arriving in Tillamook County in mid-May 2000. The future of the Tillamook State Forest was the subject of many debates among timber interests and habitat conservationists. I intended to use the PLACE mapping technique to improve the quality of citizen participation in this statewide issue. The public record related to the Tillamook State Forest shows that many citizens in the area feel deeply
connected to the forest, but in discussions among decision-makers their concerns were rarely addressed. Many in the community have strong recollections of themselves and family members working to rehabilitate the forest after the famous “Tillamook Burns.” Fires that occurred every six years from 1933 until 1951 consumed more than 300,000 acres of forest. Much of the emotional connection to the forest emerges from a sense of ownership and perceived entitlement to the economic value attached to aging timber. In a letter to the Oregon Board of Forestry, one resident wrote:

“Our Fathers + Grandfathers helped plant + reseed the Tillamook forest so there [sic] children would have stable lives. I recommend not setting aside anymore of our future” (County Resident).

Preliminary discussions with community members showed that citizens felt disconnected from the decision-making process related to the Tillamook State Forest. The feeling of “powerlessness” to have any impact on forest management planning was the reason that three people gave for their skepticism that anyone would participate in local discussions intended to influence decisions related to the Tillamook State Forest.

Semi-structured and unstructured interviews with local residents in the spring of 2000 revealed that conflict over a proposed riparian ordinance dominated local land use discussions, nearly to the exclusion of all other topics. I was told that this was due mostly to the fact that a newly organized association of landowners felt particularly threatened by the proposed ordinance, but also, local citizens felt powerless to have any impact on forest management planning. The
design of the PLACE mapping project reflects the important lesson contained in this statement - citizens who believe that their efforts will not be valued or considered by policy makers are less likely to participate. Policy makers and agency officials are consistently frustrated by the lack of participation from citizens. As part of preliminary community research, I attended several natural resources planning meetings where the absence of citizens at these was conspicuous. The absence of citizen participation in meetings was explained in subsequent semi-structured interviews. Informants indicated that citizens are consistently frustrated by the lack of consideration their concerns receive from agency officials. This situation and the tension it generates is self-fulfilling (Figure 7).

Through interviews with local citizens and participant observation, I learned that the newly formed Riparian Advisory Committee was interested in learning about...
more about citizen interests and concerns. The Riparian Advisory Committee is comprised of twenty citizens appointed by the County Commissioners to review issues and concerns related to riparian area protection and advise the Commissioners about appropriate actions. Several informants believed that concern for riparian action planning would elicit better response from citizens than forest management planning. Individuals who made these comments believe that citizens have more influence on local issues.

3.2.2 Riparian Advisory Committee Needs

During the first three meetings of the Riparian Advisory Committee, several members mentioned a desire to take advantage of people in the community with experience and knowledge who might help them make better choices. As part of the project identification process, I conducted semi-structured interviews with four Riparian Advisory Committee members to learn what they believed the needs of the committee were and discuss how the PLACE mapping technique could be implemented to help satisfy those needs. Skepticism of external influences in the planning process was high. Knowledge gained through these interviews laid the foundation for establishing a locally appropriate and accepted research program.

3.2.3 Citizen Needs

As part of the project development process, I conducted six semi-structured interviews with citizens who were active community program leaders or club
members represented science based interests, community development interests, economic development interests, property rights interests, and habitat conservation interests. Through these interviews, I learned that citizens would be more likely to participate in PLACE mapping sessions if they knew that decision-makers would honor their efforts to contribute. This corroborated citizen perceptions related to forest management planning. During conversations several citizens expressed a general wariness of public meetings. People often dropped their shoulders and spoke in frustrated tones when talking about public meetings in the past. This frustration perpetuates a general negative impression of public comment opportunities. The people I spoke with seemed frustrated because they do not believe decision-makers understand or consider citizen ideas and concerns. Upon describing the PLACE mapping technique, people seemed intrigued, but jaded by past experience.

3.2.4 Gaining Commitment from the Riparian Advisory Committee

Riparian Advisory Committee commitment to the project was essential before seeking participation from community groups. This sequence is based on two assumptions. First, prospective participants will be more inclined to participate if they believe their efforts will be heard and considered. Second, the decision making body is more likely to trust input from a process that they understand and support, and which they have helped implement. Citizens and committee members with whom I spoke in initial interviews in Tillamook County substantiated these assumptions.
Due to comments related to feelings of powerlessness regarding forest management planning and general frustration with the ability to communicate with decision-makers, it was important to ensure that the efforts of people who took the time to participate would be honored. I was unknown to members of the committee or to members of the community; thus I made efforts to communicate with several people to establish rapport before asking for their support of the project. I spent time with individual committee members to discuss the project and how it fit the needs of the committee and the community.

On July 12, 2000 I presented the scope of the PLACE mapping project to the Riparian Advisory Committee in order to fulfill two objectives. First, I wanted to secure commitment from the committee that they would honor the efforts of citizens who participated. Second, I wanted to give them an opportunity to be actively involved in learning from citizens in the community.

Prior to my presentation to the Riparian Advisory Committee, two members of the committee endorsed the project. One of these individuals wanted to “put a process in place that would enabled the committee to take advantage of the experience of people in the community.” She told the group that there are people “out there” who have a lot to offer and “the process David is going to talk about will go a long way toward helping the committee capture that.” Other committee members affirmed that in fact there are people “out there” who have a lot to offer and that the committee can learn from them. There seemed to be a genuine concern about how to do it. Another member told the group that the PLACE mapping
process that I was going to talk about “would probably help the committee a great deal.” These endorsements gave me credibility with the committee. I was completely unknown to most of them and the support of these two individuals indicated to the group that I was serious and that I had taken time to talk to people they knew.

I made a presentation using poster board with key statements written in large print to emphasize what I hoped the project would accomplish. One poster board stated that the goal of the PLACE project was “to provide citizens and committee members with an opportunity to learn from one another and explore the multi-dimensional relationships related to riparian protection and fish population restoration that are important to the people of Tillamook County.” A second poster board stated that the rationale behind the project was that “community input, prior to action plan development, allows citizen involvement in the process of defining the issues that the committee needs to consider,” and that “collaborative, interactive PLACE mapping sessions [would] enable community and committee members to better understand the reasons and relationships connected to specific citizen concerns…. [thus] … minimize[ing] the likelihood of unintended outcomes in riparian action planning and increase[ing] the likelihood of creating a politically sustainable policy.”

I described the PLACE mapping process to the group. I told them what they could expect from me while conducting the research, and I asked them for a commitment that they would attend a group learning session to interact with
PLACE maps and with the citizens who created them. After a brief discussion and one objection from a committee member who believed that the committee “already represented the diverse values in the community,” the committee agreed to support the project.

3.2.5 Development of a Subcommittee

In an early interview, one member of the Riparian Advisory Committee suggested that I try to see my role as an “unpaid staff person for the committee.” This person believed that the committee would put more trust in the results of the study if they thought they had some level of control over the process. This was further substantiated in a meeting with a second member of the Riparian Advisory Committee who thought that the Riparian Advisory Committee would find a subcommittee appealing because it would give them some mechanism to “monitor progress and exercise some control over the process.”

The subcommittee was formed from a group of members of the Riparian Advisory Committee who expressed a desire to be involved in the project immediately following my offer to conduct the research. At that time, I told the committee that I would work with a subcommittee to help establish timelines and address issues with the project as they arose. The subcommittee met for 30 minutes prior to each Riparian Advisory Committee meeting and I maintained close contact with members throughout the summer using e-mail.
The subcommittee provided a valuable local network that made the set-up of some of the group sessions possible. They helped establish contacts in the community and ensured that an appropriate sample of groups was contacted. They helped manage and distribute material that was collected. They reviewed the PLACE mapping technique, advised on its implementation, and consulted on the PLACE mapping poster session, which was the culmination of the project. Perhaps most important was that the formation of a subcommittee established a level of validity in the project among the full Riparian Advisory Committee.

Many decisions related to implementation of the project throughout the summer could have been controversial without the involvement of the subcommittee. When I told the full committee about decisions that I made in the research, I emphasized that I was acting with the guidance and support of the subcommittee. This minimized suspicion that I was somehow directing the project to secure a pre-determined result. My involvement with the subcommittee was a clear indicator to members of the committee that I was not operating alone and without accountability.

3.2.6 Identifying Appropriate Groups to Participate

The subcommittee learned about the PLACE mapping technique by participating in a PLACE mapping session. All five members of the committee participated. Their response to the process was outstanding. Each member participated fully and enthusiastically at each stage of the process. Following the
session, the group was beaming about what they had just experienced. One member said, "We need to get the PLACE mapping sessions videotaped so everyone in the county can see what we just did." The rest of the committee members energetically agreed. After participating in the PLACE mapping session, members of the subcommittee were inspired to seek other groups to participate in the project.

Identifying appropriate citizen groups to participate was a critical step in project development. Several citizens recognized the potential influence the project might have on the Riparian Advisory Committee and wanted assurance that the ideological distribution of county residents would be adequately represented in the groups that participated. One citizen expressed concern about this issue after reviewing a list of potential participant groups that I had compiled through several weeks of inquiry. He wrote:

"How are you going to balance input from these groups? You have selected a lot of liberal thinking organizations. This may result in input that is not representative of the electorate. The recent primaries suggested that there is a ground swell of people interested in protecting their property rights. Many of the groups you have selected hold different values. I am concerned that the sheer number of groups that historically share liberal values will influence the committee in a way that is not reflective of the true sentiments of the majority of voters (citizens). The reason the Landowners Association got such traction was because it was the only way the "silent majority" could be heard. These folks aren't joiners but they will turn out and vote. They don't trust the Performance Partnership (and the like) and will dismiss your work and dismiss the committee as a government sham. This could turn out to be very divisive and destroy the delicate cooperative atmosphere. I think this needs to be thought out a little more before you begin" (County Resident).
After discussion with others in the community and with the subcommittee, I decided that the list of groups was weighted toward those with liberal orientations. A comment made by a resident while discussing this topic seemed to synthesize the sentiment that others expressed. He said:

"The people who join groups want things to change. If you are happy with the way things are there is no need to get involved with a group whose mission is to change things" (County Resident).

I spoke with citizens to learn how to best access "non-joiners" – people who were attentive voters but who did not belong to clubs or associations. I made contact with a couple who agreed to host a PLACE mapping session in their home on a Saturday morning. They invited people who they knew were concerned about riparian action planning, but were unlikely to participate in formal group activities. By securing this session, initial concerns for attracting a "balanced" sample of groups were diminished. This event was a major step in establishing trust among skeptics of the project. Upon securing commitment for the "living room" session with "non-joiners," the same individual who had expressed initial concern wrote, "Sounds like you are looking for a balanced result. I applaud your effort."

When the PLACE sessions actually began, all of the groups that would eventually participate had not been identified. Because the project had gained acceptance and validity with the subcommittee, the Riparian Advisory Committee, and skeptical members of the community, I was able to freely accommodate new groups who expressed interest in participating.
From June 16, 2000 through September 26, 2000 I completed a total of eleven group PLACE mapping sessions and two public PLACE mapping sessions (Table 1). The number of PLACE mapping sessions that were conducted is simply a result of the number of groups that wanted to participate. I spoke with representatives from every group that was recommended to me or that attempted to contact me. All groups who expressed an interest participated.

There was great variation in the times and places that PLACE mapping sessions were conducted. This provided an excellent opportunity to evaluate the technique. With the exception of the sessions conducted at the Tillamook County Fair and Garibaldi Days, group sessions were held in places familiar and comfortable for participants and among people they knew. Each group participated and interacted differently. As a result, the precise sequence of the sessions and my involvement as the facilitator changed.
Table 1. Groups That Participated in PLACE Mapping Sessions

<table>
<thead>
<tr>
<th>#</th>
<th>Group</th>
<th>Date and Time</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Performance Partnership Outreach Task Force</td>
<td>Friday, June 16, 2000 at 12:00 PM at the Bay City Tillamook Bay Watershed Resource Center. Bay City</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>Garibaldi Days – Public Forum</td>
<td>Friday through Sunday, July 28-30 at the National Estuary Project Building. Garibaldi.</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Tillamook County Riparian Advisory Committee PLACE Mapping Subcommittee</td>
<td>Monday, July 31, 2000 at 6:00 PM at the County Commissioners Room. Tillamook.</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Tillamook County Landowners Association</td>
<td>Wednesday, August 2, 2000 at 6:00 PM at Pete Anderson Realty. Tillamook.</td>
<td>7</td>
</tr>
<tr>
<td>5.</td>
<td>Nestucca / Neskowin Watershed Council</td>
<td>Tuesday, August 8, 2000 at 6:30 PM at the Hebo Forest Service conference room.</td>
<td>6</td>
</tr>
<tr>
<td>6.</td>
<td>The Tillamook County Fair</td>
<td>Wednesday – Saturday, August 9-12, 2000 from 10:00 AM until 10:00 PM at the Tillamook County Fairgrounds.</td>
<td>50</td>
</tr>
<tr>
<td>7.</td>
<td>Living Room Session</td>
<td>Saturday, August 26, 2000 at 10:00 AM Local resident’s living room. Tillamook.</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>Tillamook Bay Watershed Council</td>
<td>Tuesday August 29, 2000 at 7:00 PM at the Carl L. Rawe conference room, at the Peoples Utility District. Tillamook</td>
<td>26</td>
</tr>
<tr>
<td>9.</td>
<td>Tillamook County Realtors Association</td>
<td>September 7, 2000 at 8:00 AM in the Carl L. Rawe conference room, at the Peoples Utility District. Tillamook</td>
<td>22</td>
</tr>
<tr>
<td>10.</td>
<td>Patterson Creek Pals</td>
<td>September 11, 2000 at 7:00 PM in the Bay City, City Hall.</td>
<td>8</td>
</tr>
<tr>
<td>11.</td>
<td>South County Group</td>
<td>September 20, 2000 at 2:30 PM in the Neskowin Fire Hall. Neskowin.</td>
<td>9</td>
</tr>
<tr>
<td>12.</td>
<td>Tillamook County Flood Group</td>
<td>September 20, 2000 at 7:00 PM in the OSU Extension office. Tillamook.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>PLACE Mapping Poster Session</td>
<td>September 27, 2000 from 5:00 PM until 9:00 PM in the Tillamook High School Gymnasium. Tillamook</td>
<td>60</td>
</tr>
</tbody>
</table>
CHAPTER 4:  
THE PLACE MAPPING TECHNIQUE

4.1 THE PLACE MAPPING TECHNIQUE

PLACE mapping involved groups of citizens interacting and creating visual concept diagrams related to riparian areas in Tillamook County. After a brief introduction to the rationale and purpose of the project, citizens used colored markers to draw and write on blank paper. Citizens interacted and collaborated with one another to illustrate and write about features and activities in Tillamook County; how those features and activities relate to riparian protection; and how different features and activities influence other parts of the system. Examples of PLACE maps are pictured in Figures 8, 9, 10, and 11. Figure 13 is a reduced copy of Map #4 that is easier to read.
Figure 10. Picture of Map #9

Figure 11. Picture of PLACE Mapping Session #5
Figure 12. Copy of Map #4 Reduced and in Black and White
4.2 STAGES OF THE PLACE MAPPING TECHNIQUE

Throughout this study, ten stages of the PLACE mapping technique were identified - Set-up, Introductory, Awkward Silence, River Drawing, Inventive, Collaborative, Reflective, Postcards, and Cooperative. Each stage has characteristics important to the outcome of the PLACE mapping session and several stages provide important feedback to the others. The introduction changed over the course of the study as I observed failures and successes. The inventive, collaborative, reflective, and cooperative are important activity stages that participants periodically merged in and out of as new ideas were discovered, developed, and refined. These stages provided input and feedback to each other.

![Diagram of PLACE Mapping Technique Stages](image)

Figure 13. Stages of the PLACE Mapping Technique Diagram: Arrows show that active stages often merge and inform one another.
4.2.1 Set-up

Set-up for most PLACE mapping sessions involved taping two six-foot long pieces of newsprint together to form one six-foot square piece of paper. The paper was attached to a wall or support structure using tape became known as PLACE maps. I placed a 3’x3’ card table close to the blank paper and placed colored markers, an assortment of pens, post-it notes so they were accessible to participants. In each PLACE mapping session, I made special efforts to situate the chairs in the room so they all faced the blank paper and that the space between the chairs and the map was free from obstruction.

4.2.2 Introduction

The introduction is a critical part of the process that transformed as I gained experience. The introduction was intended to convey to participants why I was at their meeting, what they could expect to do in the next hour or so and how their participation fit into the whole project. The most important part of the introduction was the explanation of rationale that drove the PLACE mapping technique. I told the groups the reason that I was conducting the study was to learn how citizens could learn from one another to help define the criteria that would be considered in riparian action planning. I used the introduction to let people know that I was not at their meeting to “inform” them about anything, or “teach” them, or get “feedback” or “input” on a list of criteria that someone thinks is important. I explained that the big blank piece of paper hanging on the wall represented an opportunity for citizens and policy makers to learn from and with one another about
the criteria that needs to be considered to achieve a locally appropriate, politically sustainable riparian action plan that minimizes unintended outcomes.

Following the brief discussion about the purpose, rationale, and methods, I called the participants' attention to the statements that they would respond to on the PLACE map. The statements and questions transformed throughout the project. In the first PLACE mapping session I used the following questions:

- What are the components of your system?
- What are the relationships between those components?
- Discuss the activities or factors that impact components of your system.
- What influences those activities and factors? Why do people do the things that they do, the way they do them? Why do other factors like regulations exist?

People did not respond well to these. Participants wanted more clarification about the meanings of “components”, “system”, and “relationships.” Instead of thoughtful looks of engagement on their faces, I saw looks of confusion. After several conversations with participants in the first session and with other members of the community, I changed the questions to statements that included more detail. I used the following statements at the next three PLACE mapping opportunities.

1) Consider and illustrate features and activities in Tillamook County that are important to you. Features may be things like riparian buffer zones, forests, cows, fish, and regulations. Activities may be things like farming, motorcycling, hiking, and fishing.

2) Now think about and illustrate how these features and activities are related to one another. For example, how riparian buffer zones are related to farming. What are some other relationships? Draw arrows between things, or explain on post-it notes what the relationships are.

3) Consider and illustrate how riparian area protection might positively or negatively impact certain features or activities and the relationships between them.
4) Consider and communicate in some way which features or actions have influence over others. For example, regulations have influence over farming and fishing.

5) Lastly, communicate on a postcard anything you would like the Riparian Advisory Committee to consider when they make their recommendations to the County Commissioners.

This appeared to be too much detail. A Garibaldi Days, people walked by the booth, glanced at all of the writing and continued walking. Participation at Garibaldi Days was very poor with only three participants. There was so much writing that, without even reading through the statements, one participant in the next group PLACE mapping session thought my purpose was to educate. He indicated that he knew a lot of educated people in Tillamook County, and he didn’t think they needed someone to gather his group together to tell them what to do. I re-wrote a condensed version of the statements. People seemed to respond well to these and the statements remained the same for the rest of the project.

1) Draw the features and activities that are important in Tillamook County.
   - Features may be things like riparian buffer zones, forests, cows, fish, regulations, etc.
   - Activities may be things like farming motorcycling, hiking, fishing, etc.

2) Draw or write how those features and activities are related to riparian protection.

3) Draw or write which features or activities have influence over others.
   - Influence may be characterized by the authority that regulations have over activities like farming, forestry, land use, etc.
I told participants that the statements and instructions were necessarily vague. I told them that I could not begin to imagine the types of things that are important to any particular group of people. Therefore, it was necessary to let them define not only the criteria to consider but also how they wanted to communicate those criteria. Participants were shown crayons, markers, pens, and post-it notes next to the blank map. I then stepped out of the way and stopped talking.

4.2.3 The Awkward Silence Stage

When I stepped out of the way, people were silent. The awkward silence stage always occurred when participants were told that the fun was about to start and that it was up to them to decide how to proceed. It is important to wait-out the awkward silence stage. The tendency is to start talking because that is what people expect. They expect specific instruction. This stage is characterized by silence and squirming in chairs. People exchange glances with one another, and then with me. Someone finally speaks up after about 30 seconds of silence and asks, “What do you mean? Do you want us to just start drawing or talk about what we are going to draw?” I would tell the person that the group could approach the construction of the map in any way it chose. Participants were told that there is no right or wrong way to create the map, but it should reflect the knowledge and creativity of the people in the room. Participants typically nodded their heads to indicate that they understood and then they sat uncomfortably looking at the statements hanging on the wall.
4.2.4 The River Drawing Stage

Within two minutes, someone always got up from his or her seat with exaggerated movements and said something like: “Well we can’t describe much about Tillamook County without a river.” This type of statement was typically said in some form of “fun” voice intended to communicate to other participants that the person getting up is just as unsure as others are. In all but one case the first thing to be drawn on the paper was the outline of a river. In one session an outgoing member of the group jumped up enthusiastically out of her chair and said, “We need a river!” Other participants made affirmative gestures and sounds and the person grabbed a blue marker and made two diagonal lines from the top right corner of the paper to the bottom left corner. The person then turned to the group and exclaimed triumphantly, “There! There is a river! You can’t have a watershed without a river!” The same woman then grabbed a green marker and began sketching large trees.

The depiction of a river was the catalyst for participation in every PLACE mapping session in this study. This was the event that broke the awkward and uncomfortable silence and seemed to provide a context to the blank piece of paper that participants could relate to. In the one mapping session the river was not the first item drawn, but other participants did not become active until a river was depicted.
4.2.5 The Inventive Stage

The inventive stage of PLACE mapping sessions occurred immediately following the river drawing. This stage is characterized by rapid exclamation of multiple common elements of a typical watershed. Simultaneous comments are common and the room gets very loud. People move about, grab markers, and call out the names of elements in their system - "Trees, blackberries, cows, clear-cuts, estuaries, bays, tributaries, fences, erosion, fish, houses, noxious weeds, sediment, bridges, roads, carts, pesticides, development, fishers, boats, gravel bars, private property, and dairies" - as they are drawing. This stage is typically full of laughter as people bend and stoop over one another exclaiming, "Oh yeah" as they see what someone else has drawn. This stage is very interactive. One person draws a tree and another says, "Oh yeah,
what about a tree that has fallen in the river?” This prompts someone else to say “We need large woody debris,” and with each statement more components are illustrated on the map.

Within seconds of the river being drawn in one session, two participants got up from their chairs simultaneously and began drawing things that were significant to them. One man drew a failing culvert, as another exclaimed, “Yes, perfect, perfect!” A road was drawn along the river and that inspired a separate participant to exclaim, “We need a bridge!” She drew a bridge across the river and another man began drawing petroleum in the river with a car (Figure 16). One less outgoing member of the group remained seated and said repeatedly, “What about cows? We need to draw cows next to the river.” After she repeated this three times with no response from the others who were busy with their own drawing, she jumped up out of her seat, grabbed a marker, and began to draw a cow next to the river.

It did not take long before all participants in this group were standing in front of the PLACE map with markers in their hands, drawing and discussing what
needed to be added, and making joking comments to one another about their respective artistic abilities.

4.2.6 The Collaborative Stage

The collaborative stage is characterized by discussions among small groups of two or three participants identifying various related components and elaborating on things that have already been drawn. Systemic inquiry in small groups is a consistent characteristic of this phase. During this stage, small groups discover important details related to specific elements that have influence over other elements that are drawn, written, or discussed. After about ten minutes of rapid verbal and visual expression of activities and features in the inventive stage, groups typically metamorphosed into interactive learning units. With nearly every new statement, another participant would remark or illustrate something that they understood to be connected. In one case, an individual mentioned “oysters in the bay.” This inspired a second participant to discuss the significance of eelgrass and burrowing shrimp. A third participant mentioned fecal coliform and its impact on oyster harvests. This interaction led to discussion and drawing of boats and people on the bay and

Figure 17. Illustration of a Connected Closed System – Map #5
farming on its tributaries. These types of interactions were consistent in every PLACE mapping session.

Non-visual interaction and sharing occurs during the collaborative stage. Participants often built on the results of brainstorming by talking to one another about their experiences and knowledge regarding multi-dimensional connections. Ideas were forwarded to the group and communication between participants elicited a broader statement of a particular connection. One example of this occurred when several people were discussing the illustration of “slides” in the upper watershed.

Participant A: “We need to put gravel on there [the map].”
Participant B: “Yeah, we need to put a slide on the road.... You know something....erosion going into the water.”
Participant C: “Sediment!”
Participant D: “Yeah we need lots and lots of gravel [drawn on the map]”
Participant E: “Well there’s lots of stuff that we don’t have up there yet...”
Participant D: “Did you guys know that two farmers flooded on the Kilches [River] last week?”
Participant F: “Yeah I know”
Participant G: “Are you serious?....I was wondering if it was serious because it felt like a winter storm.”
Participant C: “They had more water....”
Participant D: “Than they have ever had!....”
Participant C: “Oh.... well [doubt in voice].”
Participant G: “Huh?...?”

Participant D: “Yeah, ever! Just because of the gravel bars and the rivers getting so shallow.”

This segment illustrates the interaction and collaboration among the participants who have different experiences and perceptions of the impacts of increased sediment in streams. The drawings on the PLACE map provided clarity to this conversation as people simultaneously verbally and visually expressed the connections between landslides, erosion, sedimentation, gravel bars in the river, the depth of the river, flooding, and its impact on farmers. People were talking and tracing paths on the map with their hands to bring people along their thought process.

The collaborative stage generates a great deal of single word text as people write what they have drawn or simply put key words that relate to their topic on the map. Examples of this include: “Condemnation without compensation” (Map #4); “Asphalt - Petroleum - Road” (Map #7); and “LWD [large woody debris] spruce pointed upriver” (Map #4).

Figure 18. Single Words on Illustrations Act as Labels. – Map #4
The broad concept of development, for example, came up on many of the maps during the collaborative stage. It typically emerged from discoveries made while drawing houses on the river and the roads associated with them. The realization was that this often occurs within riparian areas. The groups would then illustrate the connections between riparian protection and development, or make statements about modifications that would mitigate negative outcomes such as surface run-off and herbicide sprays along the road.

Systemic inquiry and discovery among participants characterize the collaborative stage. Participants respond to one another verbally or visually on the PLACE map. The collaborative stage typically lasts for approximately twenty minutes and is a very high-energy time.

4.2.7 The Reflective Stage

The reflective stage is characterized by systemic thinking. Participants tend to discuss systemic relationships that are not easily drawn. It is very important at this stage that the facilitator encourage participants to write their thoughts and concerns on the map if they are not able to express them visually. This is the stage
at which most of the full sentence text was written on the maps. Discussions in this stage are insightful and for the most part involve all of the participants. The reflective stage usually lasts 20-25 minutes.

4.2.8 The Postcard Stage

At the end of the reflective stage, I passed out blank 3"x 5" note-cards and participants to “....tell the Riparian Advisory Committee what criteria you want them to consider when making their recommendations to the Board of Commissioners.” Postcards were a way for participants to communicate directly to the Riparian Advisory Committee.

Out of a total one hundred and twenty-nine participants in group PLACE mapping sessions ninety-five postcards were written. Seven postcards were written at the Tillamook County Fair and three were written at Garibaldi Days. Each Riparian Advisory Committee member received a packet that contained copies of the post-cards that PLACE mapping participants had written.

Examples of what participants wrote on postcards include:

“My husband and I have 5 acres on Faucet Creek. Much of it is in its natural state. We work hard to maintain and protect our property

Figure 20. Illustration with Text: Depicts participant perception that everyone has a responsibility in a system that is all connected – Map #5
which includes planting trees and other plants along the creek bed to hold the soil, but it also means taking out plants that harm the trees and ruin the look and value of our property. Let us be the stewards of our property."

“During the riparian public hearings the comment was made by the planning department that, “This riparian law was written to keep owners from trashing the rivers.” I believe this is the spirit that this was written in. As a river bank owner it is absurd to think I would devalue my property that I pay taxes, mortgage, and sweat on. If we need this law it should be written in a cooperating spirit with the land owners.”

“Riparian Advisory Committee: PLEASE PLAN FOR THE FUTURE - for our children to have the same opportunities to see salmon jump, eagles fly and drink clean safe water.”

“Dear Riparian Advisory Committee:
  Please consider preservation of species and natural ecosystems and their importance to future generations. Please study what has happened worldwide over many years of disregard for riparian systems - encroaching deserts; polluted water; loss of woodlands, habitat and wildlife. Please look at development trends in recent years in Tillamook Co. and their cost to our natural ecosystems, with an eye towards curtailment and containment. Please consider a strong educational component with diverse citizen participation. Please understand that many of us who own lands in riparian zones want and value a strong effective ordinance. Thanks.”

“There is no one on the present riparian committee qualified to make judgments or recommendation for riparian set back. Adopt the 10-10 bill as it is written. One regulation for all.”

“A great majority of land owners are good stewards of their land. They do not need more regulations to control their land. It’s not about saving salmon - it’s all about controlling and taking property.”

“If Woody Guthrie or John Denver were still alive, they would each make up a folk song about the insanity this country has been going through! This country became great because individuals had the right to think for themselves. These rights are spelled out in the “Bill of Rights.” Specifically, the 5th amendment spells out the right to own property, or to be fairly compensated if government “takes” from that property. The 10th amendment should be tattooed
on the chest of the director of NMFS. There is no mention of salmon in the constitution! Local control is best.”

“Please remember that the ordinance that the committee develops will be a living ordinance and we will have to live with your decisions. The federal courts will be hearing this issue on the 4d rule. It may be ruled unconstitutional without compensation to landowners. Flooding and riparian issues must work together. The priority is the protection of life, property, and environment, in that order.”

The original intention of the postcard activity was to provide a pre and post PLACE mapping assessment of participant thinking. In the first session, participants were asked to create individual postcards that responded to the question: “Why are riparian areas important to you?” Members were told in advance that these postcards would not be shared with anyone except the facilitator and only then after the session was complete. Participants were also told that they would not be asked to share their postcards with the group. I asked participants to choose any way they wished to communicate on the card through writing, drawing, and poetry – anything they wanted. Each participant who chose to write a postcard simply wrote a statement.

In this first session the group seemed very open to the process and they wrote thoughtfully for approximately four minutes after which time I asked them to stop writing so we could move on. I did not collect the postcards at this point. When the PLACE mapping session was complete, I asked participants to write a new postcard that responded to the question: “What do you want the Riparian Advisory Committee to consider when making their recommendations to the County Commissioners?” One of the participants said in a voice that indicated that
he was not at all interested in creating a second postcard, "I want them to consider what I wrote on the first one."

Participants were generally not interested in writing the second postcard and were not interested in the assessment aspect of the study. In the second PLACE session, I was working with members from the Riparian Advisory Committee so I did not ask them to write post cards. In the third PLACE mapping session, members of the group were very reluctant to participate in the session at all. When they finally did indicate some willingness to get started I did not want to break the momentum by asking them to sit quietly and write. I did offer this group an opportunity to write a postcard at the end of the session but no one chose to do so. In the fourth session I had begun having doubts about the postcard method for the pre and post-test. I abandoned the postcard as a pretest and tried to get people in the fourth PLACE mapping session to tell the group why riparian areas were important to them. This took too long and created an environment of monologue rather than interaction. I abandoned this preliminary step after only one attempt.

The postcards that people wrote at the end of the fourth session were very thoughtful and represented much of what had been discussed during the PLACE mapping. Similarly, several people from the Tillamook County Fair completed postcards that reflected their concerns and implored the Riparian Advisory Committee to act. I abandoned the pre and post-test by the fifth session but emphasized to groups the value of writing the postcards to the Riparian Advisory Committee. The postcards provided an opportunity for citizens to express their
concerns in a less public way, enabling individuals who were shy or less outgoing to contribute. The postcards were unimportant in answering my research questions, but they did become a fundamental element in fulfilling my responsibility to the Riparian Advisory Committee. They created a direct communications link from citizens to the committee.

4.2.9 The Cooperative Stage

The cooperative stage occurred differently for several groups. During the first two sessions, I missed the significance of the discussions that took place as I was talking with individual participants about postcards and the process. A participant was thinking aloud about what all of the comments meant. He blurted, "We gotta get some guts in the courthouse to stand up to the state and feds." This caught my attention and that of others in the room because it seemed to resonate with the tone of the session. The group wanted good leadership! They began discussing the issue of local control and decided on a statement that said: "Effective local control, i.e. must have enough guts to withstand state and federal regulations/interventions returning control to local legislators, represent citizens" (Figure 21, Map #4).
This was the first of what became known as “summary statements” or "clarifying statements." I encouraged each subsequent group to capture the essence of what they discovered through the mapping session and write a summary statement. An example of a synthesis statement that resulted from significant deliberation can be seen in Figure 22. It says, “The objective must be to protect, restore, and enhance the riparian stream environment for the benefit of humans, fish, wildlife and their essential habitats. We recognize that with development, conflicts arise between private property rights and common responsibility. These conflicts must be reconciled in a knowledgeable and fair manner. Regulations must be performance based, quantifiable, implementable and consistent in all land use zones” (Map #11).
4.3 PUBLIC OPPORTUNITIES

The PLACE mapping event at Garibaldi Days was the first open opportunity for citizens in Tillamook County to participate in a PLACE mapping exercise (Figure 23). Garibaldi Days is a small-town, summer, art, food, and activity fair. The PLACE mapping booth was set-up in a low traffic area behind the National Estuary Program headquarters adjacent to the Tillamook Bay – a considerable distance from the core Garibaldi Days activities. The Performance Partnership Outreach Task Force provided the space at no cost. The PLACE
mapping booth was set up for two full days. Only three people participated during the two-day event.

The Tillamook County Fair was a much bigger venue and the PLACE mapping booth was set-up in a high traffic area. The booth space was shared with the Performance Partnership Outreach Task Force and the Tillamook County Flood

Figure 24. Picture of Tillamook County Fair PLACE Map – Map #6

Group. The PLACE mapping booth was set up for three full days. Fifty Tillamook County residents made contributions to the map, and many more stopped to evaluate comments that were made by others (Figure 24).
Because these events took place over a period of days with multiple participants at various times, it was not possible to structure participation in the same way as group mapping events. At these two open forums, people passing by were alerted to the activity by a banner that said:

"The Riparian Advisory Committee wants to know what you think" (Figure 25). The letters were printed in 400-point type and were visible from a considerable distance. Interested participants had access to all of the same markers, pens, and crayons that the group sessions did. Participants in the public forums were encouraged to create a postcard that responded to the same question asked of participants in the group sessions.

4.4 PLACE MAPPING TECHNIQUE SUMMARY

Figure 13 illustrates that the lines between active participation stages of the PLACE mapping technique can become blurred. The PLACE mapping technique is an open, adaptable format that puts participants in control. Citizens were exuberant in their exploration and discovery at times and reflective at others.
Following the river drawing stage, when people became active, they also began to comprehend the possibilities of the PLACE mapping process. They saw possibilities not only to interact and learn from and with one another, but also to generate future conversations with others who they would meet in the PLACE mapping poster session. Visual tools were essential to this process of initial discovery and to the anticipation of future learning. Visual tools generated a contextualized record of preliminary inquiry.

The PLACE mapping process is adaptable. Participants were in control of when, how, and at what level they wished to participate in discussions and mapping. In the larger groups it was not uncommon to have two or three people who sat quietly for several minutes at a time simply watching the interaction and listening to the chatter. These people would periodically walk to the map and draw or write something related to topics being discussed or new topics that they were reminded of as a result of their observations. The PLACE mapping technique is not prescriptive. People move in and out of interaction freely. With visual tools, participants interacted, collaborated, and inquired on their terms at their own pace.
CHAPTER 5: SYNTHESIZING THE PLACE MAPS

5.1 PLACE MAPPING POSTER SESSION

Following the PLACE mapping portion of the project, a poster session was held to display all PLACE maps and provide an opportunity for citizens and committee members to view the maps and learn from one another. The poster session was organized into four parts — open viewing, PLACE map presentation, open discussion and comments, and round table discussion period. An agenda was distributed at the meeting and detailed what participants could expect from each part of the poster session. On the back of the agenda, a brief description of the project was included in order for people to understand why the study was being conducted (Appendix A and B).

5.2 OPEN VIEWING

The open viewing portion of the meeting was intended to allow participants to view PLACE maps without any interpretation from members of the community who created them. The PLACE maps were hung in no particular order in the gymnasium of the Tillamook High School. This portion of the meeting was included because one Riparian Advisory Committee member wanted to view the maps prior to interpretation from the creators. Due to time constraints, the subcommittee decided that the open viewing session could be held an hour before the regular session started. Only two people took advantage of this opportunity.
5.3 PLACE MAP PRESENTATIONS

This portion of the poster session was the first organized activity and it consumed the largest amount of time. Participants from the PLACE mapping sessions, Riparian Advisory Committee members, and county residents came to participate. Prior to beginning the process, I briefly outlined the format for the evening’s activities and explained that, because we had so much to cover, PLACE map presentations would be limited to seven minutes each.

Mapping participants summarized some of the main points that emerged in their PLACE mapping sessions and attendees were given a chance to ask questions about each map. Most groups chose to have just one person discuss their maps. I discussed the map from the Tillamook County Fair and Garibaldi Days very briefly and asked participants to come back to them during the break to honor those people who had taken the time to participate.

After group representatives made their presentations, attendees asked questions about each map, and presenters responded. Many of the responses to various questions came from attendees who were not associated with the map being presented, but who had
specific knowledge about a given topic. I kept track of time and moved people along from one map to the next. I introduced each map and asked for a representative to discuss it for the group.

During the PLACE map presentations the facilitator for the Riparian Advisory Committee created a relational diagram that captured important points as each map was presented. He used an electronic dry erase board that he rolled around the gymnasium to follow the group. He created a diagram of a river as a starting point to emphasize relationships. As presenters discussed their maps, the facilitator noted issues of concern and importance on the diagram. I told participants that the diagram would be used at the end of the session to develop a clear set of criteria that everyone could agree that the Riparian Advisory Committee needed to address. The facilitator stayed relatively inconspicuous throughout the map presentations.

5.4 OPEN DISCUSSION AND COMMENTS

This portion of the poster session was intended as an opportunity to review the PLACE maps more closely and for participants to interact with one another. Post-it notes and pens were available so people would be able to comment about specific things that appeared on individual maps. Refreshments were available at this time to encourage a relaxed atmosphere. This portion of the meeting was structureless, allowing people to interact in any way that was comfortable. No one chose to review or add comments to any of the maps during this time.
5.5 ROUND TABLE DISCUSSION

The round table discussion was the final portion of the PLACE mapping poster session. The name misrepresents this portion of the meeting because there was no table involved. The point of the name was meant to convey a sense that learning and interaction would occur. During this time, the remaining thirty-five of the original sixty participants sat in a semi-circle and I introduced the format that we would use to capture the knowledge contained in the room.

I told participants that the goal of this portion of the evening’s activity was to ensure that the major issues of concern and knowledge among the citizens of Tillamook County were recorded. I told them that the primary function of the entire PLACE mapping project was to help the Riparian Advisory Committee understand and learn from the criteria that the citizens in Tillamook County wanted them to consider. The hope was that by involving the citizens prior to action planning, the committee would be better able to minimize unintended outcomes. I reiterated something that I had said in the individual PLACE mapping sessions over and over, “If an issue of importance is not recorded, its relationships may not be considered during action planning.”
I reiterated what I had said at the beginning of the poster session: “The goal for the meeting is not to solve problems but rather to identify the issues that need to be addressed to create a locally appropriate policy.” I told the group that with this in mind, I thought we could accomplish the task in twenty minutes. We did it in twenty-five. I guided the discussion and the facilitator recorded issues and comments in appropriate places on the relational diagram. The group worked together to help make sure various issues were recorded.

This process was verbally interactive, but participants remained seated for the most part during the discussion. One example of the type of exchange that occurred during this portion of the meeting was when a person mentioned “eco” words. He said:

“I see a couple of ‘eco’ words up there – ‘ecosystem’, ‘ecology’, - but I don’t see ‘economics’. . . . It’s going to cost money to implement this thing. It’s going to cost money to do any instream improvements, etc. The economics of this kind of thing needs to flash across people’s minds here.”

A second person jumped in to the discussion at this point and asked the facilitator to “capture that by writing economics and then drawing arrows between economics and recreation.” When the facilitator did not see where the person
wanted the arrows drawn, she walked to the diagram and drew them herself. As she was drawing a third person said: “Maybe that should be under ‘issues’ and maybe it should be ‘economic impacts’.” A discussion ensued about whether economic impacts should be considered a measure to evaluate a plan or program, or whether it should be considered an “issue”. Several attendees spoke up immediately saying; “It is an issue that needs to be addressed.” When the conversation about economics stopped, I checked with the contributors to each discussion and made sure that they were satisfied with what had been written. They were and we moved on. This is the type of interaction that lasted for twenty-five minutes.

5.6 POSTER SESSION ANALYSIS

Some elements of the PLACE mapping project were out of my control. I was unable to adhere to the original project design for the PLACE mapping poster session due to the desires of some members of the Riparian Advisory Committee. I had hoped to create a forum that encouraged interaction rather than reporting. The original project design called for an interactive, non-competitive forum that enabled members of the community, participants in PLACE mapping sessions, members of the Riparian Advisory Committee, scientists, and policy makers to interact and learn from one another using PLACE maps as guides for conversations. The original design specifically rejected a structured event that required citizens to speak before a congregation of people with a limited amount of time.
Some members of the subcommittee expressed a strong desire to ensure that the Riparian Advisory Committee all be exposed to the same information. To do this, they desired a more traditional public hearing style format in which representatives from each mapping session would give the committee a synopsis of what the group learned and what they wanted the committee to know. This format created a situation in which people were required to stand and listen with prescribed opportunities for questions and comments for more than an hour and a half. The format also created a situation that required a representative from each group to attempt a synopsis of the work of many to an audience of sixty people in seven minutes.

By the end of the PLACE map presentations only thirty-five of an original sixty people remained. Comments from participants after the PLACE map presentations indicated that people were ready to “get out of the gymnasium.” One participant commented that the “the acoustics in the gymnasium made it difficult to be in there for such a long time.”

Interaction during the PLACE map presentations was limited and lacked an enthusiastic sense of inquiry. The interaction that did occur can be characterized as information exchange rather than collaborative interaction. Presenters quickly referred to statements or illustrations related to topics of concerns, but rarely elaborated on details. When participants did elaborate on details, their comments were focused on educating the audience. The format was not conducive to engaged discussion of topics that emerged during PLACE mapping sessions. An hour and a
half was far too long to ask an audience to stand and listen as presenters made
general mention of a wide range of topics.

Not a single person participated in the open discussion and comments
portion of the poster session. Four factors likely contributed to this disinterest.
First, refreshments were provided and available in the lobby of the gymnasium.
Second, there were chairs in the lobby and none available in the gymnasium.
Third, citizens were tired from standing in the warm gymnasium for an hour and a
half. Finally, a great deal of activity occurred in the lobby as a volunteer support
staff prepared for the round table discussion portion.

While participants were engaged in conversation and snacking, a support
crew hurriedly prepared for the next part of the meeting. Support staff transferred
the diagram that the facilitator had created onto a large 6x12 ft. piece of paper.
They arranged chairs in a half circle oriented toward the large diagram that was
being created. They posted survey questions that participants would be asked to
respond to at the end of the meeting. They made copies of the diagram that the
facilitator created so each person who attended the meeting would leave with a
“product” of their contributions.

The round table discussion portion of the meeting produced information
that may be helpful to the Riparian Advisory Committee, but like the PLACE map
presentations, it lacked a learning orientation. While the support crew was still
preparing the room for the round table discussion, three participants asked me to
get the next stage started. Each them indicated that they wanted to move on because they thought people were tired and that they would start leaving.

The original intent of the round table discussion was to provide people with a chance to come together after interaction with the PLACE maps and their creators to discuss and document important systemic issues with the whole group. In the end, the round table discussion was used simply as a place to document topic headings. By the end of the evening, seventy-two topic headings appeared on the relational diagram. Citizens who remained at the end of the round table discussion appeared satisfied that those seventy-two topic headings contained the things that the Riparian Advisory Committee would need to consider. A picture of the final relational diagram can be seen in Figure 29 and a transcribed version can be seen in Figure 30.

The format used at the PLACE mapping poster session had great influence over its effectiveness as a learning opportunity. A great deal of information about the situation to be considered was presented and recorded, but interactive inquiry-based dialogue was lacking.
Figure 29. Picture of Poster Session Relational Diagram: This diagram was created using citizen input during the round table discussion portion of the PLACE mapping poster session.
Figure 30. Transcribed Poster Session Relational Diagram. This diagram was created using citizen input during the round table discussion portion of the PLACE mapping poster session and transcribed by the Tillamook County Commissioners office for easier reading.
5.7 PRIORITIZATION EXERCISE

When all participants were satisfied that issues and concerns were conveyed in some way on the relational diagram, we moved on to a prioritization exercise. Participants were each given one blue dot and one green dot. They were asked to place the blue dot on the criterion on the diagram that was most important to them and the green dot on the criterion that was least important. I asked them to consider issues that had significant leverage over others in order to develop some priority that the Riparian Advisory Committee could begin with. I stressed to participants that the priority voting only provided the committee with a starting point and that each of the themes that emerged would be addressed. One participant said, "You're only giving us one blue dot!" I reiterated that everything that was written or drawn on this final map or on the flip charts would be addressed. This was clearly a concern for attendees. As the mumbles of discontent grew louder, the facilitator reassured the group that the committee would address everything that had been contributed. I told attendees that the blue dots would simply direct the group toward a priority that people believe if taken care of, will likely alleviate other issues of concern. The results of the priority development can be seen in Table 2.
Table 2. Prioritization Chart: The chart shows categories of criteria on which citizens placed high or low priority dots during the prioritization exercise.

<table>
<thead>
<tr>
<th>Category</th>
<th>Blue Dot (high priority)</th>
<th>Green Dot (low priority)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34 total</td>
<td>33 total</td>
</tr>
<tr>
<td>Property Rights</td>
<td>11 32%</td>
<td>4 12%</td>
</tr>
<tr>
<td>Education</td>
<td>6 17%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Water Temperature</td>
<td>3 9%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Riparian Areas</td>
<td>3 9%</td>
<td>4 12%</td>
</tr>
<tr>
<td>Watershed Ecology/ Physics</td>
<td>3 9%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Landowner Responsibility</td>
<td>3 9%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Gravel</td>
<td>1 3%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Implementation – Equal /Fair</td>
<td>1 3%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Adaptability/ Future Generations</td>
<td>1 3%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Speed and Depth</td>
<td>1 3%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Shade</td>
<td>1 3%</td>
<td>0 0%</td>
</tr>
<tr>
<td>Factories</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Fairness</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Tourism</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Fish – Hatchery vs. Native</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Recreation</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Predators</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Trash</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Water Rights</td>
<td>0 0%</td>
<td>1 3%</td>
</tr>
<tr>
<td>Property Values</td>
<td>0 0%</td>
<td>2 6%</td>
</tr>
<tr>
<td>Dredging</td>
<td>0 0%</td>
<td>6 18%</td>
</tr>
<tr>
<td>Water to Hillsboro</td>
<td>0 0%</td>
<td>8 24%</td>
</tr>
</tbody>
</table>

5.7.1 Prioritization Analysis

The priority dot voting represented a distinct transition in the PLACE mapping technique from working toward a broader understanding of the situation to the first steps of identifying targets for the Riparian Advisory Committee. Until this point, the PLACE mapping technique had never asked participants to make judgments about criteria that others had indicated were important. Participants
were skeptical of the method, fearing that voting would lead to the exclusion of important factors.

Results of the priority rating were generally consistent with the overall content of PLACE maps. "Property rights" was undoubtedly the most often mentioned and discussed topic throughout the PLACE mapping project. It received the largest number of high priority dots, 32% (n=11), but it also received 12% (n=4) of the low priority dots. This illustrates an ideological gap in the community between those citizens who believe that property rights need to be considered first and those who believe that such high priority consideration will have negative impacts on the well-being of salmon. "Landowner responsibility" received 9% (n=3) of the high priority dots. Discussions throughout the PLACE mapping project revealed that some citizens believe landowners need to accept more responsibility for the recovery of salmon. Some of the participants in these discussions believe that over emphasis on property rights will undermine this responsibility.

A divide is also seen in the results for "riparian areas" with 9% of respondents (n=3) placing their high priority dot on "riparian areas" while 12% (n=4) placed their low priority dots on "riparian areas". This might be better understood by noting that "education" received (17%) of the high priority dots (n=6). Many people who participated in PLACE mapping sessions suggested that more education is needed to inform landowners of the value of riparian areas. The assumption is that if landowners were informed of the importance of riparian areas
they would be more inclined to protect them. The fact that four participants placed their low priority dots on “riparian areas” is consistent with discussions that took place throughout the PLACE mapping project, in which landowners demonstrated their understanding of the perceived value of riparian areas, they just don’t believe it is correct. One property rights advocate stated during the PLACE mapping poster session that “education is needed in both directions.” This comment was intended to emphasize that people who believe that they personally do not have anything to learn have directed much of the education effort at landowners.

“Water to Hillsboro” is a topic that occurred in only one PLACE mapping session. Discussions of this topic during the PLACE map presentation portion of the meeting were related to water levels in rivers. It is not surprising that this topic received the highest number of low priority dots. Only a few people knew that water is taken from Tillamook County and piped to the city of Hillsboro. The second highest ranking low priority topic was “dredging” with 18% dots (n=6). This is surprising because dredging is believed by many to be the best “solution” to the perennial flooding that occurs in the Tillamook Bay watershed. During PLACE mapping sessions, the topic of dredging often emerged as a way to increase the depth of the river, thus decreasing water temperature and reducing siltation caused by erosion. Members of the community could often be seen wearing badges that read: “DREDGE is not a four letter word.” It is important to note that no representative from the Tillamook County Flood Group PLACE mapping session, the primary advocacy group for dredging, attended the poster session. Members of
the Tillamook County Flood Group did attend the poster session but none that participated in their individual group PLACE mapping session. Opponents to dredging believe that it will have large negative impacts on salmon populations by eliminating important gravel deposits.

Several categories that received high priority dots can be grouped together because their relationships were articulated in discussions throughout this research. "Watershed ecology/physics" received 9% of the high priority dots (n=3). Discussions of the physics of the watershed emphasized that water moves fast in the upper watershed and slow in the lower watershed. In the upper watershed, sediment and debris are carried swiftly and deposited in the lower watershed as the water velocity decreases. This deposition of debris and importantly "gravel", which received 3% high priority dot (n=1) is widely believed to decrease the "speed and depth" of the river. "Speed and depth" received 3% of the high priority dots (n=1). Decreased speed and depth in the rivers is widely believed to be a major cause of "water temperature" increases which received 9% of the high priority dots (n=3). Excessive water temperature is considered a leading cause of salmon population decline by the Department of Environmental Quality. These four categories are inextricably linked and if combined would have 17% of the high priority dots (n=6).

The diagram in Figure 31 illustrates important relationships between these points. It also highlights leverage in the system that represents points of departure for future discussions.
A wide variety of factors influence salmon populations. Problems and solutions that are identified and recommended by scientists and agency managers, do not always make "common sense" to long-time residents with experience in the watershed. Regulations address only elements in the system that agency can control. Landowners want regulations to be adaptable in order to address natural events. Scientists have sought to determine causes of salmon decline.

- Regulations intended to protect fish prohibit removal of sediment and debris.
- Decreased water depth causes water to disperse over a large area and move more slowly.
- Elevated water temperature increases algae bloom which decreases available oxygen for fish.
- Water temperature increases when a river is shallow and dispersed over a larger area.
- Sediment and debris from upper watersheds are deposited in lower watersheds.
- Flooding causes property damage.
- Flooding occurs more frequently when a river is shallow and dispersed over a larger area.
- River dikes provide protection of property by confining rivers in the lower watershed.
- Riparian areas provide shade and soil stabilization to rivers.

Figure 31 Watershed Physics Diagram: Based on discussions that occurred during PLACE mapping sessions. Follow arrows to view cause and effect loops.
The diagram in Figure 31 illustrates important sequences that describe perpetual cause and effect "loops". Citizens who participated in PLACE mapping sessions described information contained in text boxes. Loops are shown using arrows between text boxes. Sediment and debris accumulation is the common element in each of these loops. Sediment and debris accumulation is important to landowners because they believe it increases flooding which is devastating to property.

Regulations that prohibit removal of sediment and debris are an important element in this diagram. The topic of river management means removing debris and dredging gravel for many citizens. Flooding creates property damage. Landowners know from experience that over time and particularly in flooding events, river systems become "clogged" with debris, which diminishes the function of the river. The function of the river, which is viewed in anthropocentric terms by many landowners, is to carry water out of the watershed. When debris accumulates, water is forced to disperse. As water disperses, flooding occurs, creating more sediment, which is turn trapped by debris. The more sediment and debris that accumulate, the more the river spreads-out over a larger area, which creates more flooding.

The Oregon Department of Environmental Quality has indicated that high water temperatures are a leading cause of salmon decline and that the primary cause of increased water temperatures is lack of shade on rivers and streams. Many landowners are very skeptical of this analysis. Their skepticism is derived from
personal experience, which tells them that deep water is colder than shallow water, and that deep water occurs in narrow channels with deep pools.

Landowners are unconvinced that either water temperatures or riparian areas play a significant role in salmon decline. They are quick however, to point out the "fuzzy" logic of restricting active management of rivers if cool water temperature and shade are desirable. The loops in the diagram in Figure 31 show the relationships between sediment and debris accumulation, water temperatures, flooding, property damage, and regulations. The physics of the watershed became an important issue, because landowners saw an opportunity to create a "win-win" situation. They want to actively manage the rivers, thus decreasing sediment and debris accumulation. They believe this will decrease flooding, which will decrease both damages to private property and riparian areas. By decreasing sediment and debris accumulation and reducing flooding, landowners believe that erosion would be decreased, the river will function as it should, and therefore will be deeper and colder.

The diagram illustrates obvious points of "leverage" in the system—sediment and debris accumulation and regulations that control their removal. This is an example of an excellent beginning point for meaningful inquiry among diverse experience bases. Inquirers could examine the motivations for regulations, the impact of regulations on other parts of the system, and explore options to create broadly accepted situation improvements.
The prioritization exercise was intended to give citizens an opportunity to direct the Riparian Advisory Committee toward a starting point. The exercise accomplished this task.

5.8 SURVEYS

Two survey formats were used at the end of the poster session to measure citizen perceptions of the PLACE mapping technique. The primary research concern of this project is to determine if the PLACE mapping technique generated learning. The surveys were also used to learn about the impact of PLACE mapping related to criteria development and citizen interest in participating.

When the round table discussion was complete, I directed participant attention to four survey statements that were hanging on the wall. I asked them to place a colored dot on the scale that reflected their reaction to the statements. I then asked them to fill out a conventional survey card and return it to one of the support crew prior to leaving.

Table 3. Possible Survey Respondents

<table>
<thead>
<tr>
<th>Riparian Advisory Committee Members</th>
<th>Citizens</th>
<th>County employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLACE mapping Participant</td>
<td>Non-PLACE mapping Participant</td>
<td>PLACE mapping Participant</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>11</td>
</tr>
</tbody>
</table>

At the end of the round table discussion, thirty-four participants remained (Table 3). Participants are categorized based on analysis of videotape of the event. Fourteen of the participants who remained were Riparian Advisory Committee members, seven of whom had participated in a PLACE mapping session. Two participants who remained were county employees associated with riparian action planning; one of whom had participated in a PLACE mapping session. Eighteen participants who remained were interested citizens, eleven of whom had participated in a PLACE mapping session.

The average response level to the two survey formats was 78%. Table 4 shows the response level for each survey statement or question. The questionnaires were not marked or distributed in a way that made it possible to identify if respondents had participated in a PLACE mapping session or if they were members of the Riparian Advisory Committee.

Table 4. Survey Response Levels

<table>
<thead>
<tr>
<th>Statements</th>
<th>#1</th>
<th>#2</th>
<th>#3</th>
<th>#4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive Survey</td>
<td>Total Responses</td>
<td>26</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Percentage possible Respondents</td>
<td>76%</td>
<td>76%</td>
<td>82%</td>
</tr>
<tr>
<td>Conventional Survey</td>
<td>Statements/Questions</td>
<td>#1</td>
<td>#2</td>
<td>#3</td>
</tr>
<tr>
<td>Total Responses</td>
<td>29</td>
<td>26</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Percentage possible Respondents</td>
<td>85%</td>
<td>76%</td>
<td>79%</td>
<td>85%</td>
</tr>
</tbody>
</table>
5.8.1 Interactive Survey Results

1) Place a DOT on the scale in a position that represents your thinking about the level of success citizens had in helping the Riparian Advisory Committee identify the criteria needed to create a locally appropriate riparian action policy.

\[ \begin{array}{ccc}
\text{Citizens were very successful} & \text{Some Success} & \text{Citizens made no impact} \\
\text{Happy Face} & & \text{Sad Face}
\end{array} \]

2) Place a DOT on the scale in a position that describes the impact the PLACE mapping process has had on your interest in the activities of the Riparian Advisory Committee.

\[ \begin{array}{ccc}
\text{Large Impact} & \text{Some Impact} & \text{No impact at all} \\
\text{Drawing of an attentive} & \text{Drawing of a person yawning} & \\
\text{listener} & & \\
\end{array} \]

3) Place a Dot on the scale that describes how much you have learned about citizen values related to riparian areas in Tillamook County.

\[ \begin{array}{ccc}
\text{I learned a lot} & \text{I learned Some things} & \text{This was a complete waste of time. I did not learn anything} \\
\text{Happy Face} & & \text{Sad Face}
\end{array} \]

4) Place a DOT on the scale that represents how much the Riparian Advisory Committee learned from citizens.

\[ \begin{array}{ccc}
\text{They learned a lot} & \text{They learned some} & \text{They didn't learn a thing.} \\
\text{Happy Face} & & \text{Sad Face}
\end{array} \]

Figure 32. Interactive Survey Results

Each of the interactive survey statements is associated with a 100 cm scale. Results of the interactive survey can be thought of as percentages. Measurements for the analysis of these results are taken from the right side of the scale to the left. A dot placed on the left portion of the scale (50 cm to 100 cm) indicates a measurable positive response to the statement. A dot placed on the right portion of the scale (0 cm to 50 cm) indicates a measurable negative response to the statement.
5.8.2 Traditional Survey Results

1) In what kind of public forum are you most comfortable participating?
Total Responses (n=29)
83% (n=24) large meeting
21% (n=6) writing a letter
10% (n=3) comments about other types of forums

38% (n=11) small group
28% (n=8) completing a questionnaire

2) Did your participation in a PLACE mapping session help stimulate you to participate in Riparian Advisory Committee activities?
Total responses (n=26)
50% (n=13) Yes
50% (n=13) No

3) Do you believe that your participation in a PLACE mapping session helped you influence Riparian Advisory Committee actions?
Total responses (n=27)
59% (n=16) Yes
11% (n=3) No
15% (n=4) Comments suggesting that the outcome is yet to be seen.

4) What has been most helpful for understanding riparian issues?
Total Responses (n=29)
65% (n=19) Meetings
37% (n=11) PLACE mapping sessions
37% (n=11) Comments that cite other sources
21% (n=6) Word of mouth
27% (n=8) Newspaper articles

5) Do you think that as a result of participating in a PLACE mapping session, you have a better understanding of features and activities related to riparian area protection?
Total Responses (n=25)
80% (n=20) Yes
4% (n=1) No
16% (n=4) Comments that indicate some increased level of information

6) What do you think helped the Riparian Advisory Committee best get a feeling for citizen concerns?
Total responses (n=28)
14% (n=4) Letters
71% (n=20) PLACE mapping
7% (n=2) Phone messages
14% (n=4) Comments suggesting other forms of input
36% (n=10) Responses at meetings
29% (n=8) Postcards

Figure 33. Traditional Survey Results

The traditional survey was distributed on 8x5-inch card stock to every participant present following the prioritization exercise. Response levels to each statement can be seen in Table 4.
5.8.3 Learning

Two interactive survey questions and three traditional survey questions were used to determine if participants believe the PLACE mapping technique generated learning. The third question in the interactive survey asked participants to "Place a dot on the scale that describes the how much you have learned about citizen values related to riparian areas in Tillamook County." Dots on the continuum associated with this statement ranged from 38 cm to 99 cm. Out of a total of twenty-eight responses, the average placement of dots is 68.7 cm. The results of this statement reveal that the majority of respondents believe they personally learned something about citizen values related to riparian areas. No respondents to this statement placed their dot in a position to indicate that they experienced a low level of learning.

Table 5. Interactive Survey Results for Questions about Learning

<table>
<thead>
<tr>
<th>Did individual learning occur? Interactive Survey Question #3</th>
<th>Did learning occur among the Riparian Advisory Committee? Interactive Survey Question #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>69%</td>
<td>47%</td>
</tr>
</tbody>
</table>
The fourth question on the interactive survey asked participants to “Place a dot on the scale that represents how much the Riparian Advisory Committee learned from citizens.” Dots on the scale associated with this statement ranged from 6 cm to 94 cm. Out of a total of twenty-four responses, the average placement of dots is 47.5 cm. The majority of dots are clustered on the continuum between section marks at 34 cm and 70 cm. This heavy cluster of dots indicates that respondents believe that the Riparian Advisory Committee “learned some” but there is considerable doubt about how much.

Question four on the traditional survey asked participants: “What has been most helpful for understanding riparian issues?” Eleven of twenty-nine respondents marked a box associated with more than one choice. Results for this question are shown in Table 6. Responses to this question indicate first, that many citizens are reluctant to suggest that just one form of communication is the “most” helpful. And second, that the PLACE mapping technique is seen as helpful to less

Table 6. Things That Have Been Helpful for Understanding

<table>
<thead>
<tr>
<th>What has been most helpful for understanding riparian issues?</th>
<th>90%</th>
<th>70%</th>
<th>65%</th>
<th>37%</th>
<th>37%</th>
<th>27%</th>
<th>21%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meetings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLACE mapping</td>
<td></td>
<td></td>
<td>65%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other sources</td>
<td></td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newspaper articles</td>
<td></td>
<td></td>
<td></td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Word of mouth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td>articles</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21%</td>
</tr>
</tbody>
</table>
than half of the respondents. These results are interesting when compared with question five on the traditional survey.

Question five (Table 7) on the traditional survey asked participants: “Do you think that as a result of participating in a PLACE mapping session, you have a better understanding of features and activities related to riparian area protection?” 80% of respondents (n=20) marked the box associated with the answer “Yes.” 4% of respondents (n=1) marked the box associated with the answer “No.” 16% of respondents (n=4) wrote comments that indicated that they had increased their level of knowledge as a result of their participation. Responses to this question clearly demonstrate that PLACE mapping sessions are seen as a valuable way of
increasing knowledge and understanding, however, when compared to the responses in question number four, it is clearly not viewed as the "most" valuable way.

Question six on the traditional survey (Table 8) asked participants: "What do you think helped the Riparian Advisory Committee best get a feeling for citizen concerns?" Ten of the twenty-eight respondents marked a box associated with

Table 8. Traditional Survey Question #6.

<table>
<thead>
<tr>
<th>What do you think helped the Riparian Advisory Committee best get a feeling for citizen concerns?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLACE mapping</td>
</tr>
<tr>
<td>Responses at meetings</td>
</tr>
<tr>
<td>Postcards</td>
</tr>
<tr>
<td>Letters</td>
</tr>
<tr>
<td>Comments suggesting other forms of input</td>
</tr>
<tr>
<td>71%</td>
</tr>
<tr>
<td>36%</td>
</tr>
<tr>
<td>29%</td>
</tr>
<tr>
<td>14%</td>
</tr>
<tr>
<td>14%</td>
</tr>
</tbody>
</table>

more than one choice, again suggesting that many people are reluctant to prioritize. 71% of respondents (n=20) marked the box associated with "PLACE mapping."

These results raise questions about the responses to question number four on the interactive survey, in which less than half of respondents thought the Riparian Advisory Committee learned more than "some." These data indicate that while
participants do not believe the Riparian Advisory Committee learned much, they believe the PLACE mapping technique contributed to whatever they did learn.

5.8.4 Criteria Definition and Citizen Interest in Participation

Statements on the surveys that concern citizen definition of criteria to be considered and citizen interest in participating in riparian action planning were intended to answer questions unrelated to the focus of this research. They were intended to address needs articulated by the committee during preliminary interviews and they do not address the research question. The questions were developed to gauge first, if citizens believed that the PLACE mapping technique helped them define the issues that the Riparian Advisory Committee would consider, and second, to learn if the technique inspired citizens to become more involved. Responses to the interactive survey indicate that most respondents believe that citizens were successful in helping the Riparian Advisory Committee identify criteria to consider. Responses to the traditional survey however, indicate that citizens are skeptical they will have any influence over Riparian Advisory Committee actions.

Results from the surveys suggest that the PLACE mapping technique made a positive, but not enormous contribution to citizen interest in the activities of the Riparian Advisory Committee. Only half of the respondents to the traditional survey believe that their participation in a PLACE mapping session helped
stimulate them to get involved in the activities of the Riparian Advisory Committee.

5.9 SURVEY ANALYSIS SUMMARY

These survey data give a glimpse into respondent perceptions of PLACE mapping, but they also raise important questions. There was no mechanism to categorize survey responses to determine those who had participated in PLACE mapping session and those who had not. Additionally, there was no mechanism to determine which responses came from Riparian Advisory Committee members and which came from other citizens. Without this knowledge, responses to questions and statements that refer to the effects of participating in PLACE mapping sessions become very general. They necessarily encompass both the PLACE mapping sessions, which were guided by LINCS theory and the PLACE mapping poster session, which was not.

Survey responses clearly demonstrate that people think PLACE mapping contributed to learning. There is a major discrepancy, however, between perceptions of how much the Riparian Advisory Committee learned. The interactive survey suggests that respondents are skeptical about the level of learning that occurred among the Riparian Advisory Committee, although responses to the traditional survey suggest that people think PLACE mapping was very important for helping the Riparian Advisory Committee get a feeling for citizen concerns. These results may suggest that respondents made the distinction between learning and getting information.
There was no mechanism in the PLACE mapping project that demonstrated to community members that the Riparian Advisory Committee "learned" anything. Responses to the interactive survey show that an overwhelming majority of respondents believe that citizens were successful in helping identify important criteria. However, responses to the questions on the traditional survey show that people are less sure about what type of influence they had on the committee.

There are two types of active participation that are needed in association with the PLACE mapping technique. First, the technique has to be stimulating enough to get people out of their seats and contribute to the PLACE map. Activity in the PLACE mapping sessions leaves little doubt that the technique generates this motivation. A second type of motivation is the type that inspires people to continue the learning process by becoming active contributors to the Riparian Advisory Committee. Surveys are an inadequate measurement tool for this issue. Responses to the surveys show that the PLACE mapping sessions had little impact on citizen interest in participating in the activities of the Riparian Advisory Committee. Observations of the PLACE mapping technique, however, clearly demonstrate the success of the technique in generating interaction and participation within PLACE mapping sessions.
6.1 RESEARCH OBJECTIVES

LINCS theory is based on the notion that learning enhances understanding of complex situations. The assumption of LINCS is that if learning occurs, actions taken to improve an offending situation will achieve better results than if learning does not occur. LINCS theory indicates that learning occurs when people engage in non-competitive, interactive collaboration, and systemic inquiry. The literature suggests that learning is likely to occur when people are active participants in tasks and discussions in which they are able to speak from experience (Walker and Daniels 1994; William 2000; Daniels and Walker 2001). The literature also suggests that visual tools increase systemic inquiry and interaction (Hyerle 1996).

The purpose of this study was to develop a supplemental public participation technique that combined non-competitive, interaction, collaboration, and systemic inquiry, essential features of LINCS theory, and test its application in a natural resource action-planning situation. The goal of the research is to determine if the PLACE mapping technique, which is built on LINCS features, generates learning.

6.2 DEVELOPING AND TESTING THE PLACE MAPPING TECHNIQUE

Competition limits the potential for learning. The PLACE mapping technique decreased competition among participants by promoting adequate
identification of the situation to be addressed prior to developing targets and pathway to improvement. The PLACE mapping technique did not encourage participants to create solutions or suggest remedies to an offending problem. It fostered exploration of the situation by enabling citizens to openly share their experiences and knowledge of systems related to riparian protection.

As seen in Chapter One, comments made during the traditional public participation process associated with the draft riparian ordinance emphasized the negative outcomes of a proposed riparian ordinance. Participants in public hearings and other media outlets reacted in fear to a draft action plan that was created without their input. Citizens oriented their participation toward a goal and rallied others to take a stand against the perceived attack on property rights. "Villains" were quickly identified and active participants implored others to "take sides."

The PLACE mapping technique was implemented in the community after the original proposed riparian ordinance draft was no longer viable, but before a new draft was created. Timing is essential to decrease competition. By conducting this study in a political environment in which policy change was not eminent, citizens were able to communicate in a proactive rather than reactive way.

The PLACE mapping technique is a tool designed to improve learning among citizens as well as from citizens. Unlike traditional public forums, which are designed to get feedback about a plan that has already been drafted or criteria that have already been defined, the PLACE mapping technique enables citizens to
explore and discover important issues. The technique eliminated hierarchy, such as that seen in traditional public hearings, in which participants are required to speak "to" an authority. PLACE mapping sessions had no arbitrator or information "receiver." By eliminating the need to "give" information to someone in a position of authority, the PLACE mapping technique eliminated the need to develop concise advocacy-based statements. This left participants free to "wonder" about relationships and ask questions of one another. This is not to suggest that advocacy-based comments and discussions were completely eliminated, but disagreements were shared openly without fear of "losing" something.

By reducing competition, the focus of citizen participation transformed from guarding against losing access to a valued resource, to openly sharing the reasons behind concerns. The non-competitive atmosphere was enhanced with visual tools. The beginning point for interaction was a blank piece of paper. Blank paper symbolically reinforced the concept that the ideas of the participants were to be the topic of inquiry and everyone had an opportunity to contribute their ideas.

Visual tools also enhanced interaction, collaboration, and systemic inquiry among participants. Blank paper and markers were an excellent catalyst to get people out of their chairs and actively engaged. Not only did people share their thoughts and ideas; visual tools allowed them to create a visual or text-based record of important concepts. Interaction occurred as people inquired about comments and illustrations as they were written or drawn on the paper. Collaboration occurred when participants talked together and expanded on the ideas of others.
Relational thinking occurred when discussion led to the discovery that various features or activities in a subsystem under consideration are connected to, or have influence over other features, activities or, subsystems.

An example of this type of sequence occurred in a PLACE mapping session in which a participant drew a road along a river. This led another participant to ask the question: “Why do roads always seem to be right next to rivers?” A third person added to the conversation by suggesting that development occurs next to rivers because people like to be near water. This discussion blossomed into an interactive conversation that involved each participant. The group discussed numerous reasons for placement of roads. They considered the motivations of developers, engineers, and maintenance workers. Eventually, the group concluded that roads, when placed next to rivers, are harmful to riparian areas and aesthetic beauty. They also discovered that people choose to put roads next to rivers, so clearly they can choose alternatives that mitigate perceived negative impacts.

Interaction and collaboration occurred using the PLACE mapping technique because participants were able to see and participate in the drawings and writings of others. The non-competitive atmosphere made it easy for people to joke with one another, which led easily to discussions about topics of interest. In one case, as a person drew a cow on a map, she laughed and pointed out to others that she is “not an artist.” This simple, fun comment was an invitation to others to explore the issue of cows near streams. Another person accepted the invitation by adding a depiction of “poop” behind the cow. This led to a discussion among at least three
people about fecal coliform, algae bloom, and oxygen levels and the relationships between these elements and cows near streams.

These types of interactions demonstrate that the PLACE mapping technique successfully accomplished its objectives to create non-competitive, interaction and collaboration among participants. Systemic inquiry is also demonstrated, but limitations of the technique become clear when considering this feature of LINCS.

6.3 SYSTEMIC INQUIRY IN PLACE MAPPING SESSIONS

The PLACE mapping technique produced abundant examples of experiences being shared, perceptions being refined, and knowledge being created—in short, "learning." Systemic inquiry occurred within each PLACE mapping session as participants discussed important relationships between features and activities in their system. Participants expanded knowledge of relationships by identifying important influences or "leverages" that have impact on other parts of the system, but inquiry was limited to the experience of the circle of learners present during the learning event. Systemic inquiry has levels of complexity and this study demonstrates the importance of developing mechanisms that ensure communication between subsystems of participants occurs.

Whole systems are composed of a complex network of subsystems that interact and influence one another. The PLACE mapping technique attempted to improve citizen participation in riparian action planning by actively seeking participation from citizens to articulate their knowledge and experience with
relationships between elements in these subsystems. To do this, I pursued established citizen groups in the community to participate.

Members of established groups are typically united by a common interest and do not represent significant ideological diversity. Lack of ideological diversity limits systemic inquiry. Systemic inquiry in PLACE mapping sessions was confined to the knowledge and experience bases of participants in relatively ideologically homogenous groups. While systemic inquiry did occur, interaction and learning between ideologically diverse participants with a variety of knowledge and experience in multiple subsystems did not occur. To promote this interaction, the project design needed to provide an opportunity for groups of PLACE mapping participants to engage in a LINCS based process with representatives from other subsystems. The poster session was intended to be this opportunity, but it failed to use LINCS theory and as a result did not expand learning. By eliminating the opportunity to learn with and from members of the community with different knowledge and experiences, knowledge that was created during PLACE mapping sessions remained isolated to individual groups.

Systemic inquiry occurred within topics understood by participating groups in PLACE mapping sessions. Systemic understanding, however, was limited by the experience and knowledge of members present during the sessions. The PLACE mapping technique produced conversations and documentation of relationships among system features that influence salmon populations. Systemic inquiry during PLACE mapping sessions, however, rarely explored motivations for
behaviors or searched for validity in influential factors such as, regulations, scientific research, and landowner concerns. Speculation about these motivations occurred, but broad inquiry was not possible because the PLACE mapping technique did not provide for interaction among diverse experience and knowledge bases.

6.3.1 PLACE Maps Represent Only Fragments of the Whole

Comments and illustrations that appear on PLACE maps are synthesized statements that attempt to capture the essence of important learning moments. Much like taking notes, not everything that was discovered or probed during interactive, collaborative, systemic inquiry can be conveyed in text or in illustration. For this reason, participants often wrote statements or words, or drew pictures that, for the author or a small group of participants, convey meaning, but to a future observer have limited value. Maps cannot be seen as static representations of group knowledge. *The PLACE mapping technique is only one piece of a much larger learning process!* The usefulness of PLACE maps is dependent on continuation of the learning process. Future inquiry among both the original participants as well as community members with different knowledge and experience is essential.

Illustrations and statements on PLACE maps make reference to numerous elements and relationships in a system, but they do not articulate the complex and dynamic inputs and outputs that are discussed in dialogues. Elements are the “things” in a system (cows, trees, rivers, gravel, etc.) and relationships are the
linkages between those things (usually some form of action) (Daniels and Walker 2001). While the elements and relationships that are conveyed on PLACE maps are important parts of systemic inquiry, they neither represent the extent of knowledge that was generated in PLACE mapping sessions, nor do they provide a picture of a whole system. Examples that illustrate this point can be seen in a variety of statements that have complex systemic meaning in the context of the learning moment that inspired them, but are unlikely to convey the full extent of the discovery without engaged discussion with one or more of the original participants. For example:

"Can’t have a riparian zone boundary when you can’t control the river" (Map #4).

This comment was written during a discussion among participants in a PLACE mapping session, in which people shared experiences of seeing erosion from flooding consume large pieces of river-front property. The statement is meant to capture several of the group’s frustrations about shortsighted, prescriptive regulations that do not address systemic inputs, such as flood control. It is intended to compel future inquirers to consider the wisdom of static political boundaries applied to dynamic natural systems. Participants in this session were concerned that if riparian setbacks are established, and management activities, such as dredging, continue to be restricted, landowners will see their useable land diminish with each flood event. Because flooding causes erosion, a feature of a person’s land or an activity that may occur or exist outside the riparian boundary presently, may fall within the boundary after a significant flooding event erodes the river’s
edge. This statement reflects a condensed lesson meant to lead to further exploration in some future conversation. It begs for further inquiry.

The knowledge and experience bases of people who generated this comment lacked the perspective of someone who could articulate the rationale for regulations as well as inquire and learn from the frustrations and experiences of landowners. Without this interaction, the motivations for behavior that create the undesirable situation described in the statement cannot be understood or addressed. Likewise, without interactive, collaborative, systemic inquiry among interested parties, the complex understanding of the citizens who generated this comment is not likely to be understood or considered. This represents a major gap in communication that isolates subsystems and is likely to perpetuate frustrations. Figure 34 illustrates the perceptions of participants and highlights gaps that limit systemic understanding.
Lacking the ability to actively manage the river system to protect property, landowners lose all control of their property. They are on one hand subject to the dynamic natural system, and on the other confined by rigid political boundaries.

Do regulators understand these perceived threats?

If the river system is allowed to meander naturally, landowners view the idea of an artificial, politically motivated boundary as both senseless and threatening.

Do regulators understand the damage that flooding does to property?

Is this what the people who created the regulations want?

Lacking the ability to manage the river system, "control the river," the river channel will meander.

Flooding events cause erosion.

Do regulators understand the damage that sediment and debris which exacerbate flooding?

What are the motivations behind these regulations?

Regulations prohibit the removal of sediment and debris which exacerbate flooding.

What are the consequences if river systems are managed to protect private property?

"Can't have a riparian zone boundary when you can't control the river" (Map #4).

Figure 34. Illustration of Gaps in Inquiry: “Can’t have a riparian zone when you can’t control the river.” Follow the arrows to view topics of concern and associated questions that arose during PLACE mapping sessions.
Another example of a statement that is loaded with complex systemic meaning for PLACE mapping participants, but may be cryptic to a later observer is:

"SEALS - we are not killing enough seals" (Map #7).

This statement was one of many that resulted from a long discussion about natural predators of salmon. Seals are widely believed to be primary predator of salmon. Participants in the group who produced this statement believe that historically the negative impacts of seals to salmon populations were reduced because fishers often killed seals to reduce competition. Participants in the discussion were immensely frustrated that seals now enjoy protection under the Marine Mammal Protection Act, but have reached population levels that do not warrant protection. Discussions of this topic in several PLACE mapping sessions elicited stories of fishers who had salmon "on the line," but by the time they were able to get the fish on the boat, a seal had taken a bite out of its belly. Discussions surrounding this topic invariably involved Endangered Species Act protection of other predators, such as, sea lions, cormorants, sea otters, and Caspian terns.

On several maps a variety of comments related to the subject of predators demonstrate local perceptions that this subsystem has great influence. No single statement or illustration captures the complexity of the topic or the opportunity for learning.

"Over-fishing, seals, cormorant, terns, mergansers, etc. (there are 60 predators to salmonids all together). Increased protection of predators since 1977 (MMPA MBA) has caused more predation of salmon. You can't legislate or engineer Mother Nature. Leave Mother Nature alone" (Map #7).
“ESA protects predators + endangered salmon Predators and Ocean conditions / commercial harvest” (Map #4).

“These are protected: - - - Cormorants eat 90 fish per bird per day - - - Sea Lions are decimating the salmon - - - We are losing more salmon to sea lions than we are catching with a license. - - - There needs to be a balance when dealing with predators” (Map #12).

These statements provide excellent opportunities for systemic inquiry among people who have knowledge of and experience with subsystems related to the topic of predators. Without further inquiry among diverse knowledge bases, the perceptions that drive these statements will continue to be perpetuated, and the trust of agency managers will continue to decline. Without further inquiry, agency managers will not have access to knowledge gained through the lived experience of long-time residents. When isolated from open, non-competitive communication, community members with experience and knowledge in different subsystems can only speculate about the motivations of others. Figure 35 illustrates perceptions of citizens and important gaps in systemic inquiry that could provide points of departure for future conversations.
Are scientist aware of this resentment and the impact it has on their credibility?

Landowners are resentful of regulations that restrict their ability to use, protect, and manage their property because scientists have focused attention on riparian areas as the "cause" of salmon decline.

Many landowners believe that disproportionate attention on riparian areas neglects other factors that contribute to salmon decline.

Landowners are unaware of policy recommendations that address predation and do not trust that scientists have studied the "whole picture" Therefore their recommendations are not credible.

Many landowners believe literature that suggests these predators have population levels in excess of historic numbers and do not warrant protection under the Endangered Species Act.

What can scientists learn from landowners related to this topic?

Some citizens believe that predators to salmon are a major contributor to salmon population decline.

Cormorants and Caspian terns prey on juvenile salmon before they get to the ocean. Sea lions, sea otters, and seals prey on adult salmon as they reenter the watershed.

Do scientist believe that their recommendations have considered the "whole picture"?

Do all scientist believe this? How are accurate estimates made, and who determines when a species is no longer endangered?

Are these factors considered when decisions are made to reduce hatchery production of salmon?

Have scientists addressed issues of predation by marine mammals and birds that are protected by the Endangered Species Act and the Marine Mammals Protection Act? What have they found?

Many landowners believe that disproportionate attention on riparian areas neglects other factors that contribute to salmon decline.

Many landowners believe literature that suggests these predators have population levels in excess of historic numbers and do not warrant protection under the Endangered Species Act.

What can scientists learn from landowners related to this topic?

Figure 35. Gaps in Systemic Inquiry Related to Predators: Gaps in inquiry are represented by the symbol "↓". A cause and effect loop is viewed by following the arrows.
6.3.2 Relationships are Gateways to Systemic Inquiry

Numerous statements on PLACE maps either make specific reference to a relationship or a relationship is easily inferred from the statement. These relationships represent gateways to potentially rich future discussions with representatives of other subsystems. For example:

"Deep holes are cold with or without trees" (Map #6).

This statement indicates that water temperature is impacted by the depth of the river regardless of the presence of trees. This relationship has important and complex systemic significance to many participants in PLACE mapping sessions. They believe that increasing the amount of shade from trees on a stream is less important than increasing the depth of the river. Emanating from this simple relationship is a grasp of a complex system of inputs, such as scientific recommendations that do not corroborate the lived experience of many longtime residents of Tillamook County.

In the discussion that produced the statement above, two longtime county residents expressed their dissatisfaction with the science behind recommendations to increase shade on streams. Their experience told them that young salmon could be found in deep cold pools. Their experience also told them that water temperature in rivers and streams get colder the deeper one goes. Their conclusion was that if fish need colder water, managers need to get the rivers deeper. They were skeptical that riparian area protection would accomplish this. By reading the
statement alone, later observers of the map are unlikely to realize the full systemic impact of the perceptions driving this statement which is a deep mistrust of the science driving policy recommendations. Additionally, without the opportunity for interaction and collaborative systemic inquiry with others who believe shade is important, a learning opportunity is missed.

The following statements and illustrations (Figure 36) point to other factors in the system of salmon decline and demonstrates the concern that scientists need to “look at the whole picture” (Map #6). Many participants in PLACE mapping sessions believe that things other than riparian areas have significant impacts on salmon decline.

"Don’t blame riparian areas along the rivers for loss of habitat in the bay and poor ocean conditions which are actually causing salmon decline" (Map #6).

“Credited scientists saying riparian zones are the healthiest in generations, millions of smolts leaving the watershed, adults returning in diminishing numbers” (Map #4).

“Ocean causing decline [drawing of a fish]” (Map #5).

“Fish counts by sonar. Document baseline information” (Map #4).

“Need to learn what’s here in order to monitor” (Map #10).
"How can we save ‘wild fish’ when there have been no studies done to establish what a ‘wild fish’ is" (Map #4)?

“Failed past practices have contributed to fish decline, and now they are blaming private riparian owners” (Map #7).

Each of these statements and illustrations represent opportunities for learning. Each statement and illustration clearly demonstrates an understanding of isolated subsystems and is meant to inspire further inquiry among others.

Figure 37. Illustration of Poor River Conditions Caused by Poor Management – Map #12

Figure 38. Illustration of Good River Conditions Possible With Management – Map #12

Statements and illustrations on PLACE maps are all that is left of valuable, discussions, conversations, and moments of discovery among people in a variety of learning situations. The value of these comments and illustrations are not adequately captured as static records of past conversations. The products of the PLACE mapping sessions are the learning moments that occurred. The value of PLACE maps are in their ability to inspire further inquiry.
6.4 EXPANDING THE CIRCLE OF LEARNERS

The PLACE mapping technique combined features of LINCS and found that decreasing competition while engaging citizens in interactive, collaborative systemic inquiry using visual tools generated learning. The value of the technique is limited if interaction, collaboration, and systemic inquiry and thus learning are isolated to individual groups of PLACE mapping participants. The original design of the PLACE mapping poster session aimed to enlarge the circle of learners to include people who represented other elements of the policy development process, such as scientists, agency managers, and policy makers. The poster session was intended to be an extension of the learning process that was started in the PLACE mapping sessions and was to be grounded in LINCS theory.

Unfortunately the design of the PLACE mapping poster session was transformed into an information-driven public input opportunity. The format allowed for only time-limited monologues and information exchange. This traditional model of public participation puts the presenter in the position of the information provider and the audience of the information receivers. The format of the PLACE map presentations produced no examples of enthusiastic moments of discovery. It stifled systemic inquiry by decreasing opportunities for interactive, collaborative, dialogue. As a result, learning was limited.

The PLACE map presenters shouldered a heavy burden. They were asked to synthesize an hour and a half of thoughtful, interactive discussion among many
participants with diverse backgrounds and knowledge into a seven-minute monologue. The task was just like public hearings, where complex systemic knowledge must be crammed into a few minutes of testimony. The learning orientation of the PLACE mapping project ended with the transformation of the poster session into an information-driven public event.

As a result of the impossible task of one presenter summarizing what the group learned, presenters generalized, or became position advocates. Most presenters waved their hands around at the maps pointing to statements and calling out topics of concerns. They would then fall upon a topic that they themselves were comfortable enough to talk about in front of a large audience. They would then proceeded to express their opinions about the topic with no intention or concern for interaction or collaboration because time did not allow it.

In several cases, comments were advocacy-based, imploring members of the Riparian Advisory Committee and the audience to look closely at a given topic, or be skeptical of certain information. Comments, stated as questions, were phrased in such a way that the answer was obvious. An example of this occurred when one presenter wanted to emphasize that the science behind riparian area management is lacking. This presenter said to the group:

"In the 1970s, 1975. Fish and Wildlife used to have all of the logging operations when they did their logging, absolutely clean all of the creeks. The reason I know this is because my husband would come home and say, "we had to hang guys with ropes over the banks to pick up the sticks and the twigs and everything. So all of your streams were bare of all woody debris. Now they’re putting it all back. What scientific basis is this based on" (County Resident)?
This statement is intended to cast doubt on the believability of the science driving habitat restoration and thus increase sentiment for landowners that are now the unwilling players in another great experiment.

In another case, a presenter posed a series of questions clearly challenging the validity of riparian areas, in general, as a significant cause of salmon decline. The presenter specifically challenged the methods used by the DEQ to determine water temperature. He related a story of seeing a representative from the DEQ taking temperature measurements near his home in “ankle deep” water when a deep pool was just a few feet away. He told the group that the person taking the measurements said the water was 66 degrees and that was “bad, bad, bad.” He then told the group, “I guarantee you, if I was a fish and I needed cold water, I would be at the bottom of that pool.” A member of the audience who was familiar with temperature measurements on the portion of the stream in question, disputed the claims made by the presenter that he spoke to anyone from the DEQ taking water temperature measurements. Following a tense altercation in which the presenter articulated the circumstances of the encounter, the member of the audience leaned over to the person standing next to him and said, loud enough that others could hear, “He’s full of shit.” This interaction dramatically altered the mood of the meeting. Not a single question was asked of the presenter when the time came to an end.

Advocacy-based comments such as the ones in these examples do not lead to systemic inquiry. Rather, they create negative interaction and increase
competition. All of these things are contrary to the efforts of the PLACE mapping technique and decrease the incidence of learning. Advocacy-based rhetoric places emphasis on negative outcomes rather than exploring the intentions of actions and behaviors. Systemic inquiry into complex situations requires maximum attention to both intentions and outcomes, and as a result of eliminating LINCS based processes, this attention to systemic detail did not occur among presenters and the audience at during the PLACE mapping poster session.

6.5 ANALYSIS SUMMARY

The PLACE mapping technique produced excellent participation among participants. It generated activity, and got people out of their chairs “mapping,” creatively, collaboratively, and non-competitively. It contributed to citizen perceptions that they learned about issues related to riparian areas and that they contributed to the criteria that the Riparian Advisory Committee would consider.

The PLACE mapping technique decreased the opportunity for time-limited monologues, thus decreasing reactive participation. It increased creative, open discussions and elaboration of knowledge and understanding. Instead of being singularly directed to achieve a goal, participants using the PLACE mapping technique explored the features of their system and relationships important in riparian action planning.

The PLACE mapping project fulfilled its responsibilities to both the research and the community it was conducted in. The project would not have been
possible without the participation of the Riparian Advisory Committee and citizens in Tillamook County. It was important to pay attention to the needs of these community members and work with them to ensure that the format of the PLACE mapping project would achieve their goals.

The documentation of elements and relationships of systems that appeared on PLACE maps were intended to be reminders of important components of in-depth discussions. The PLACE maps provided a point of departure for broadening systemic inquiry not products for review. Moments of learning and discovery are the products of PLACE mapping sessions. These things are contained in the minds of participants and can be accessed by continuing the learning process. In creating an information driven poster session, not only did the Riparian Advisory Committee miss the chance to learn from citizens, the citizens missed the opportunity to learn from the Riparian Advisory Committee and others.

The crucial element of the PLACE mapping project is the PLACE mapping technique, which is grounded in LINCS theory. Like any element, the PLACE mapping technique is only part of a larger system. While this study produced useful data about the technique, in the final analysis, its effectiveness cannot be separated from its relationships to the whole project. The PLACE mapping project is a system of events and interactions and the effectiveness of any one event is dependent on its ability to adjust to systemic inputs.
7.1 "FACTS ARE FACTS, BUT PERCEPTIONS ARE REALITY"

As I conducted this research, I was often asked, "How is research on public policy development anthropology?" In response, I often quoted a well-known member of the community who summarized the importance of learning from citizens when he stated, "Facts are facts, but perceptions are reality." This statement had a resounding ring of truth to it. A scientist, or agency manager, or citizen, or policy maker can talk until he or she is blue in the face about facts, but as this study demonstrates, perceptions of those facts drive the acceptance or rejection of public policy.

The diverse perspectives, experiences, and values of community members involved with and impacted by policies create widely different perceptions of important systemic elements in contentious situations. Applied anthropology concerns itself with learning from community members about perceptions and explanations of external stimuli. This study applied anthropological skills to help interested parties learn about perceptions and explanations related to salmon decline and riparian protection in order to define the situation to be addressed by policy.

Chapter One outlines the conflict that ensued when planners attempted to create additional restrictions on private property. The planners who created the draft ordinance believed that their recommendations were grounded in sound
science and extensive community participation. Studies conducted as part of the National Estuary Program and data from the Department of Environmental Quality clearly articulated the substandard quality of waterways in Tillamook County. Data collected from an extensive public outreach process showed that citizens wanted healthy riparian areas. The planners acted on recommendations of the science they trusted to enhance water quality and salmon habitat.

Problems arose because many landowners believed their property rights were under attack and that the “science” behind riparian protection is incomplete guesswork and poor justification for property rights violations. There is considerable doubt among many citizens that increased riparian protection will have any positive impact on salmon. From the perspective of many long-time residents, the remedies suggested to improve water quality and fish habitat lack “common sense” and do not corroborate knowledge gained through lived experience in one’s place. Many landowners agree that riparian areas may be one factor in the larger system of salmon decline, but they believe it is a tiny factor in a much larger picture - a picture that has far more effective points of leverage.

The PLACE mapping technique is a valuable new supplement in the toolkits of practitioners working to learn about the systems that need to be addressed by policy and where points leverage exist. The varied perceptions of “problems” that need to be “fixed,” and favored “solutions,” require a broad and inclusive systemic approach to learning using a variety of tools. Learning cannot be unidirectional. For sustained improvements to occur, all parties must embrace a learning
orientation. Just as agency officials and scientists have much to learn from citizens and landowners, landowners and citizens have much to learn from agency officials and scientists. The PLACE mapping technique is a tool that caters to multiple learners. In addition to the in-depth knowledge that can be generated by a researcher, the PLACE mapping technique has the added value of generating new knowledge among potentially marginalized groups, thereby expanding the potential for appropriate change.

The PLACE mapping technique both supplements and is supplemented by other applied anthropological tools, such as participant observation, focus group sessions, and ethnographic interview (Ervin 2000). As a supplement to focus group learning and ethnographic interviews, the PLACE mapping technique has great potential to enhance the ability of researchers to probe more deeply into the systemic perceptions and knowledge of individuals and groups. The PLACE mapping technique can help practitioners who use focus groups better understand key points of leverage that need in-depth inquiry. Knowledge generated as a participant or observer of the PLACE mapping technique will enhance the ability of interviewers to ask more meaningful, probing questions as informants discuss their experiences and knowledge related to systemic issues. Participant observation and interview techniques not only have the potential to be enhanced by the PLACE mapping technique, but also, these tools are essential to identify an appropriate situation for a PLACE mapping project. The PLACE mapping technique does not
substitute any current method, nor can it function effectively without the use of others.

7.2 PROJECT DEFICIENCIES

This research set out to improve citizen participation in riparian action planning by generating learning and active involvement. Citizens felt marginalized by the process used to develop the draft riparian ordinance. Scientists, agency officials, and policy makers did not express a feeling of powerlessness or concern that they were unheard or misunderstood. The PLACE mapping project, therefore, focused on citizen participation. As a result of this focus, however, the project development was “system-blind.” It developed only one opportunity to expand learning among representatives from diverse subsystems. While the PLACE mapping technique demonstrated great capacity for generating interaction and learning among participants, the project also generated important questions about appropriate project design and implementation.

While learning clearly occurred among participants in the PLACE mapping sessions, this study found the usefulness of that learning diminished by two important factors related to project design and implementation. First, the focus on citizen contributions reduced opportunities for necessary interactions between critical elements of the social system of policy development – scientists, agency managers, and policy makers. Second, the PLACE mapping poster session, which was the only outlet available to expand learning to include those elements was not
guided by LINCS theory. Both of these deficiencies are problematic because they reduce the quality of learning that is possible by reducing the diversity of experiences involved in systemic inquiry. The results are: first, a situation that is well articulated but that may be inadequately understood; and second, groups of isolated learners who have a much better comprehension of important systemic relationships, but do not understand influences in subsystems outside of the experiences of the group.

Participants in many PLACE mapping sessions lacked the opportunity to learn the legitimate reasons why actors in other subsystems behave the way they do. Without this link, a wide range of relationships in the system of riparian action planning can be well articulated, as they were in PLACE mapping sessions, but important inputs are absent in inquiry.

Participants and Riparian Advisory Committee members had limited opportunity to learn why landowners want freedom to control their property; and why scientists believe healthier riparian areas will contribute to stronger salmon runs; and why agency managers have placed such emphasis on what is perceived to be a small part of the “whole system”; and why policy makers appear to put more faith in science than the common sense of experience. The PLACE mapping technique helps identify important issues and generates systemic inquiry about those issues, but inquiry into underrepresented subsystems in the PLACE mapping process is an important deficiency of the project.
7.3 FUTURE RESEARCH

The ability of community members to communicate fully with one another was a constant issue of concern throughout this research. More than understanding what others think, effective communication generates self-reflection and systemic understanding. Effective communication can do more than simply describe perceived facts and perceptions, it can answer the question: What motivates perception and behavior?

7.3.1 Mechanisms for Diverse Participation

The issue of expanding the circle of learners to include policy makers, scientists, and agency managers is crucial to any future research or utilization of the PLACE mapping technique. A significant barrier to learning is found in the lack of opportunity for citizens with diverse experience and knowledge bases to interact, collaborate, and inquire more deeply about perceptions and motivations. An example of this gap is seen in the case of watershed ecology/physics. Riverfront property is impacted by erosion, which is caused by flooding, which is increased by restrictive regulations designed to protect salmon habitat, which is subsequently destroyed by erosion and flooding (Figure 39). Frustration on the part of landowners stems from their perceptions that scientist, agency managers, and policy makers are simply not looking at the whole picture. The perception is that the agencies involved are controlling finite portions of the larger system, and for some unexplained reason do not see the systemic implications of their decisions.
It may in fact be the case that agencies are not looking at the whole picture, or it may be that landowners do not fully comprehend the reasons behind existing regulations. Whichever combination happens to be the case, mechanisms must be developed that generate dialogue and learning among diverse subsystems.

![Debris Removal Diagram](image)

**Figure 39. Debris Removal Diagram Illustrates Citizen Knowledge: Cyclical loops can be seen by following arrows.**

Future research will need to test mechanisms to create interaction, collaboration and learning among diverse groups for their effectiveness. Simply adding to the quantity of PLACE maps created by conducting PLACE mapping sessions among isolated groups of scientist, agency officials, and policy makers is unlikely to improve project design. Isolated groups, regardless of their ideological disposition or level of expertise, are likely to arrive at similar limitations. The
primary limitation is their inability to expand systemic inquiry among knowledge and experience bases not represented in the group.

Future research should design PLACE mapping projects to include PLACE mapping sessions among all groups important to the planning situation. Following the completion of the initial round of PLACE mapping sessions, one or more representatives from each group could be identified and a new group created. The new group should reflect the ideological diversity of county residents and representatives from each element of the system should be represented. They could be brought together to participate in a PLACE mapping poster session conducted as part of a regularly scheduled meeting of a decision-making body. The decision-making body would have the opportunity to observe the session and interact with participants. By observing the PLACE mapping session and interacting with representatives of the community, decision makers would get the “information” they need, but they would also be able to interact and communicate with participants, thus increasing the potential for learning.

7.3.2 Ensuring Decision Maker Understanding

This research produced significant data that show the PLACE mapping technique generates learning. It also produced data that show it generated extensive information about criteria that citizens believe need to be considered by policy makers. Still unknown, however, and very important to the political sustainability of any policy that addresses riparian protection, is the level
understanding policy makers have about concerns that were raised and how they use the “information” they took from the PLACE mapping poster session.

The survey data show that citizens are skeptical about the level of learning that occurred among the Riparian Advisory Committee. Future research should seek to develop mechanisms to ensure decision-makers adequately comprehend the important systemic detail that citizens expect. It is frustrating for people to invest time and energy making contributions aimed at improving a process only to have the value of that effort diminished due to poor mechanisms for communication.

Because the research project was primarily concerned with the PLACE mapping technique, it ended with the PLACE mapping poster session. The extent to which the Riparian Advisory Committee learned or used information they received from citizens as a result of the PLACE mapping project is unknown. Observations and informal conversations with citizens who remain active with the Riparian Advisory Committee suggest that the committee is goal oriented and that they did not spend much time attempting to incorporate the knowledge of citizens into a clear definition of the situation to be addressed. Future research could identify portions of the PLACE mapping project that the Riparian Advisory Committee found useful, as well as things they did not.

The effect of the PLACE mapping project on the citizens of Tillamook County is also unknown. Approximately one month after the PLACE mapping poster session, the politics of Tillamook County changed dramatically. Politically active landowners were successful in their efforts to vote in two new county
commissioners in the November 7, 2000 election. The new commissioners are ideologically aligned with politically conservative landowners that do not want further government restrictions on private property. It is worthwhile to consider the impact of the PLACE mapping technique may have had in validating landowner concerns about riparian protection. Throughout the PLACE mapping project, discussions of property rights and skepticism of the science behind riparian protection occurred frequently. It would be interesting to know if the political momentum of landowners was enhanced by the widespread validation of their concerns that occurred in PLACE mapping sessions.

7.3.3 Landowners and Rural Residents

Many landowners in Tillamook County have extensive knowledge of their place. They value the economic, recreation, and leisure benefits derived from their property and are offended by restrictive regulations that imply their management practices have significant impact on salmon decline. Landowners see themselves as stewards not villains.

There are important distinctions between factions of interests that need to be understood more thoroughly in Tillamook County. Many people do not make distinctions between types of landowners. Farmers are governed under Senate Bill 1010. Forest owners are governed under the Forest Practices Act. Rural homeowners are governed by county land use ordinances. Participants in PLACE
mapping sessions rarely cited activities that typically occur on rural residential property as problematic for riparian areas.

Activities such as logging, cows in the stream, discharge of manure into the stream, recreational vehicle traffic, and importantly, agency mismanagement were commonly cited reasons for riparian area degradation and salmon decline. With the exception of vegetation removal, most activities that citizens indicated were of concern for riparian areas do not often occur on rural residential land. Property owners in this category are resentful that they are being bullied into strict regulations. They believe that rural residential property makes up a very small percentage of total riparian areas and that the activities that occur on their property are benign when compared to commercial activities such as logging and farming.

Understanding of the complex issues related to riparian action planning in Tillamook County could be improved with research that accurately identifies the types of landowner and the quantity of land that would be impacted by a county riparian ordinance.

7.3.4 Critical Analysis

It is important to note that I selected the components of LINCS theory, developed the PLACE mapping technique based on my interpretation of how non-competitive, interaction, collaboration, and systemic inquiry could be achieved, and tested that technique myself. As a researcher and facilitator, I was engaged in both helping the community meet their needs and evaluating the PLACE mapping
technique. I had a vested interest in seeing the process succeed. Future research on the PLACE mapping technique by researchers disconnected from its development would enhance general understanding of the technique and would likely identify weaknesses that I may have missed as a result of my active participation.

7.5 SUMMARY

The methods and techniques we use to interact and communicate with one another in contentious policy environments are products of our imaginations. Traditional methods and techniques that place emphasis on information exchange after a goal to “fix” or “solve” a problem has been defined by experts, do not facilitate learning. By establishing targets and recommending pathways to achieve those targets prior to active citizen involvement, policy makers miss the opportunity to learn what appropriate goals for improvement are and citizens do not believe their input matters.

If a situation is adequately identified, locally appropriate targets for improvement can be developed and pathways to achieve those targets can be evaluated for their systemic implications. To adequately identify a situation to be addressed by policy, a learning orientation is needed. A learning orientation broadens the field of inquiry to include people with diverse knowledge and experience bases. Broadening the field of inquiry will generate a better understanding of systemic factors associated with an undesirable situation.
LINCS theory demonstrates the need to reduce competition and create interaction, collaboration, and systemic inquiry among people in order to generate learning. The theory suggests that visual tools work best to accomplish this. The PLACE mapping technique combines these important elements of LINCS theory. It improves the quality of citizen participation by improving the ability of citizens to help define the situation that needs to be addressed by policy. However, the PLACE mapping technique is a small part of a larger learning process and cannot be viewed as a public participation program by itself.

The PLACE mapping technique must be implemented in an environment committed to a learning process. For the PLACE mapping technique to create long lasting improvements, the circle of learners needs to be expanded and the learning process continued among community members with different knowledge and experience bases. The process must include citizens, scientists, agency officials, and policy makers who are interested in learning from and with one another in order to establish locally appropriate targets and pathways that address a commonly understood situation.

We choose the techniques and methods we use for public participation in contentious policy environments. If current techniques are not working – if citizens do not feel heard, understood, or valued – we not only have the capacity to change what we are doing, but a responsibility. Courage, exploration, and discovery are essential components in the tool kits of practitioners hoping to transcend dysfunction in current modes of public participation. If we can acknowledge that
the world of significance that we inhabit is the product of our creative human
imaginations, then it is reasonable to assume that humans have the capacity to
evaluate and transform current modes to reflect collective aspirations. The PLACE
mapping technique is one step toward that end.
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APPENDIX A. Poster Session Agenda

September 27, 2000
Riparian Advisory Committee
PLACE Mapping Poster Session
Tillamook High School Gymnasium

5:00 - 6:00 Open viewing
- During this time, citizens and Riparian Advisory Committee members will have an opportunity to look at the PLACE maps without interpretation from any of the mapping participants.

*************** Some set-up may still be going on at this time ***************

6:00 – 7:15 PLACE map presentation
- This time period will give poster session attendees the opportunity to learn from mapping participants and ask questions about individual maps. Representatives from each mapping session will have an opportunity to provide a brief summary of key concepts that emerged during their PLACE mapping session.

The facilitator will move with the group during this period to record major themes that emerge during group discussion.

7:15 – 7:45 Open discussion and comments
- At this time, the group will disperse and individuals who wish to look more closely, make comments on the maps, or engage in discussion will have a chance to do so. Post-it notes will be available for people who would like to respond to concepts or statements made on individual maps.

7:45 – 9:00 Round table discussion period
- This session will enable citizens and Riparian Advisory Committee members to work together to define the important concepts and issues that need to be addressed in order to create a locally appropriate policy.

The facilitator will assist with this portion of the meeting using notes that were recorded earlier during the poster presentations.
APPENDIX B. Description of the PLACE mapping Project

PLACE mapping – What is it?

Throughout the summer, a graduate student from Oregon State University encouraged participation from groups in Tillamook County in an effort to help Riparian Advisory Committee members learn more about citizen concerns related to riparian areas.

The process used is called PLACE mapping. PLACE is an acronym that stands for People Learning About Community and Environment. The PLACE mapping project sought to engage citizens in the process of defining the issues of importance and concern that the Riparian Advisory Committee will address.

Citizens worked in small groups to create conceptual drawings called PLACE maps. PLACE maps represent features and activities of interest to a particular citizen or group and the comments that participants had related to those features and activities have been written on each map. The conceptual drawings that are hanging in the gymnasium this evening are the products of thirteen separate PLACE sessions.

The goal of the PLACE mapping project was to help citizens and policy makers avoid unintended outcomes from a riparian area policy. By helping citizens and policy makers communicate and understand a broad range of local concerns, the Riparian Advisory Committee will be better able to create a locally appropriate policy – something that considers the unique concerns and needs of citizens in Tillamook County.

PLACE mapping sessions were not intended to give people information or get feedback on a set of criteria that someone else thought was important. PLACE mapping aims to give citizens have an active voice in defining the criteria that the Riparian Advisory Committee needs to consider.

In PLACE mapping sessions, participants who are seated in front of 6’x 6’ piece of paper hanging on the wall, responded to three statements:

4) Draw the features and activities that are important in Tillamook County.
   - Features may be things like riparian buffer zones, forests, cows, fish, regulations, etc.
   - Activities may be things like farming motorcycling, hiking, fishing, etc.

5) Draw or write how those features and activities are related to riparian protection.

6) Draw or write which features or activities have influence over others.
Influence may be characterized by the authority that regulations have over activities like farming, forestry, land use, etc.

Colored markers, crayons, pens, post-it notes, and index cards were available for people to find a way to convey the types of things that they think are important. The benefit of drawing or writing things on a large piece of paper was that people could explore all of the relationships to a particular concept without losing track of where they started and the information they generate could be shared with others.