

An Evaluation of

The Morrison/Arden Creek
Landholder Stewardship Project

For
Comox Valley PROJECT WATERSHED Society



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Morrison Arden Creek Landholder Stewardship Project Evaluation

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Executive Summary

The purpose of the Landholder Stewardship Project was to raise awareness among landholders and promote landholder stewardship of sensitive habitat located on or near private lands. The purpose of this evaluation is to determine if the Morrison/Arden Landholder Stewardship Project resulted in changes in attitudes, awareness, or behaviors about stewardship issues and to determine if it led to increased habitat protection. The evaluation also provides recommendations for improving the design and management of future programs.

The evaluation took place in September and October 2000, one year after the completion of the pilot landholder stewardship project. The evaluation methods included interviews with key informants, a review of the project proposals, reports, and database, meetings with stakeholders, and a telephone survey. The survey was used to examine tools and activities, barriers to stewardship involvement, and attitudes towards habitat protection. The consultant contacted 157 respondents; these consisted of streamside residents, non-streamside residents, and a pretreatment group (residents who did not participate in the project).

The consultant examined implementation issues such as setting goals and objectives and the design of data collection and storage. The goals provided direction to the project but could have been altered slightly to make them more measurable. The landholder contact project database was designed to maintain basic information on landholders. It provided a good base for the Morrison/Arden project and for future programs. The project coordinators suggested ideas to increase the database's functions including improving records of site visits, changing some of the data fields and improving property identification. Limited time and resources proved an issue in several areas of the project.

The deliverables were, for the most part, successfully achieved in the pilot: 247 residents were contacted, 77 people participated in two watershed walks, 32 people made verbal stewardship pledges, and 4 landholders considered a conservation covenant on their property. The watershed map, distributed as part of an information package to all respondents, proved effective in engaging respondents and increasing their awareness of habitat and other physical aspects of the watershed. The property visit had a positive impact on some respondents' awareness of habitat and on their behaviors. Some landholders felt that they had changed their practices as a result of the property visit. The watershed walks have the potential to be a good educational activity, especially if publicized more widely. The stewardship pledge has the potential to be a very effective tool, especially if developed as a written pledge and used in conjunction with other activities. Respondents who received an information package only (no phone call, no property visit) were least impacted by the project. There is a need to develop creative activities that respond to the interests of the participants. Determining the desired stewardship behavior, developing a knowledge of barriers to the stewardship behavior, and then choosing a set of appropriate behavior change tools and strategies may help to improve the project's effectiveness.

Due to time constraints, the survey sample size was smaller than recommended. Results of the survey may not be statistically valid. However, it appears that the Morrison/Arden Landholder Stewardship Project contributed to an increase in awareness among residents about the watershed and an increase in stewardship practices. In addition to its accomplishments, the lessons from the implementation and outcomes of the landholder stewardship project provide a solid base for future program development.

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Members of the Morrison-Arden Landholder Stewardship Program Advisory Group:

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Introduction

In 1999, Project Watershed undertook a pilot landholder stewardship project in the Morrison Creek and Arden Creek communities in the Comox Valley, located on Vancouver Island. The project was a pilot for an ongoing program, which will include further activities in the Morrison-Arden Creek watershed, the Brooklyn Creek watershed in Comox, and the newly gazetted Glen Urquhart (Hobson) Creek watershed in east Courtenay. This evaluation took place one year after the completion of the project.

1. THE LANDHOLDER STEWARDSHIP PROJECT

A. Project Goals

The primary project objective was to raise awareness among landowners and promote private landowner stewardship of sensitive habitat located on or near private lands. The original proposal for this project goes on to say: *“Landowners are invited to make voluntary stewardship agreements in which they agree to protect, restore, and/or monitor the natural features of their property. This can range from leaving an area in a natural state to preventing damage by limiting or modifying uses or undertaking habitat restoration work. Long-term goals include encouraging binding conservation agreements and catalyzing the formation of neighborhood stewardship groups. A priority is to maintain a positive experience with the landowner and to adapt expertise to fit landowner interests and priorities.”*

B. Project Description

1. Resources

\$20,000	Habitat Conservation Trust Fund
<u>\$ 3,500</u>	Canada Trust - Friends of the Environment Fund
\$23,000	Total Cash Contributions

\$8,500: This is the approximate value of in-kind contributions to the project (Project Watershed staff time, office space and equipment, ArcView equipment and mapping knowledge, expertise of resident volunteers, guidance of advisory group and board members).

2. Target Group

The intended primary target for this project was streamside residents of the Morrison and Arden Creeks. The secondary target group was residents of the Morrison and Arden watersheds who do not live adjacent to the streams.

3. Planned Outcome Objectives

The planned short-term outcome objective is to increase citizen awareness and participation in watershed protection activities. The long-term objective is to prevent damage to salmon habitat.

4. Deliverables

The original objectives were changed in response to a shortfall in funding; half of the originally requested funding was awarded. The original objectives are noted in the November 1998 proposal to the Habitat Conservation Trust Fund. The revised objectives are noted in the June 5, 1999 work plan.

Original Objectives	Revised Objectives
500 households will receive stewardship packages.	200 households will receive stewardship packages.
80 landowners will be visited.	200 landowners will be contacted
60 stewardship pledges will be gathered.	25-35 pledges will be gathered.
3000 ha will be under pledge.	500 ha will be under pledge.
12 landowners will be interested in developing conservation covenants on their land.	-
3000 people will be reached through 5 presentations, 12 media articles, and 6 workshops.	*
Existence of an updated landowner contact database.	Existence of an updated landowner contact database.

* Notes from the September 29, 1999 planning meeting state a goal of 100 participants from two watershed walks.

2. RESEARCH METHODOLOGY

A. Evaluation Purpose

To clarify the purpose of the evaluation, the researcher contacted key stakeholders of the project advisory group. They were sent a copy of the goals of the pilot project and a set of questions designed to draw out opinions on the purpose of the evaluation and on research questions. They received a follow-up call to gather their responses. These were synthesized and relayed back to the group for verification.

The evaluation purpose is:

- To determine if the landholder contact program resulted in changes in attitudes or awareness among landholders about stewardship issues.
- To determine if the landholder contact program led to increased habitat protection.
- To provide information for improving the design and management of future programs.

B. Research Questions

These research questions were developed in consultation with the advisory group.

1. Implementation

- I. Were the goals and implementation objectives clear, precise, and measurable?
- II. Was data collection and storage efficient and effective?
- III. Were the implementation objectives achieved?

2. Outcomes

- I. Were the outcome objectives achieved?
- II. Did the landholder contact program result in awareness and attitude changes toward conservation or stewardship issues among landholders?
- III. Did the landholder contact program result in increased stewardship actions by landholders on their property?
- IV. Were the specific techniques (brochure, map, site visit, handouts, and watershed walk) effective in catalyzing a change in landholder awareness, attitudes, or behaviors?
- V. Did this program lead to landholders' further involvement in stewardship activities other than those taking place on their property (for example, joining a streamkeepers group or the forming a new group)?
- VI. Did the landholder contact program elicit particular unintended outcomes?
- VII. Did the landholder contact program lead to increased habitat protection?

C. Definition of Terms

Streamside refers to streamside landholders who received an initial information package, a phone call, and a property visit.

Phone call refers to streamside landholders who received an initial information package and a phone call, asking them if they would like a property visit or additional information.

Non-Streamside refers to non-streamside landholders who received an initial information package via Canada Post or hand delivery.

Pretreatment refers to streamside landholders from a nearby watershed (Brooklyn Creek) who had not participated in the project. They were surveyed to provide a comparison and to gather baseline data for an upcoming project in their watershed.

Program Coordinator refers to the coordinator of the Morrison/Arden Landholder Stewardship Project.

D. Methods

1. Methods

The methods were chosen in response to the purpose and research questions. Project Watershed asked that a survey be completed with project participants and with a pretreatment group.

- a) Implementation objectives were evaluated by interviewing key informants and reviewing project proposals, reports, the database, and other documentation.
- b) Outcome objectives were evaluated through telephone surveys with a sample of landowners in the Morrison/Arden area and in the pretreatment area, and a review of project reports.
- c) The consultant led the interpretation of survey data with input from stakeholders.

2. Sampling

Out of town property owners and corporate properties were deleted from the population list prior to sampling. Phone numbers were gathered where necessary.

Pretreatment: Of a total population of 114; 83 were selected for the sample.

Program Participants: Total population of 274. Of these, 25 received a property visit and 32 received a phone call; all of these were included in the sample. 160 of the remaining landholders, who had received a package only, were selected for the sample.

E. Confidentiality in the Evaluation Process

Confidentiality and data use were explained to respondents. Each respondent received an identification number. Names were not associated with any information received as a result of participation in the survey.

F. Participant Response

There was not enough time to call all people in the samples. The following indicates targets and calls completed:

	Morrison/Arden	Pretreatment
Population (landholders contacted/total landholders Brooklyn Creek)	274	114
Sample Size	160	83
Completed Calls	109	48
Organizational Targets	75	20

Note: Organizational targets refer to the number of contacts that Project Watershed asked the consultant to complete.

This chart indicates the response to the survey:

	<u>Landholder Type</u>			
	Streamside	Phone call	Non-streamside	Pre-treatment
Survey Complete	22	20	31	40
Incomplete	1	-	-	-
Not avail during survey	-	-	1	-
Moved from area	-	1	6	-
Not available after 6 calls *	-	2	-	2
Language barrier	-	-	2	-
Refusal	-	6	17	6
Total	23	29	57	48
No phone listing	-	3	14	15

* If the respondent was not available after six attempts to reach them, they were not called again.

3. RESULTS, DISCUSSION, AND RECOMMENDATIONS

A. Implementation

The questions in italics below are from the evaluation research questions.

1. Goals and Implementation Objectives

The primary project objective was to raise awareness among landowners and promote private landowner stewardship of sensitive habitat located on or near private lands.

Were the goals clear?

The goal as stated in the project proposal contains two actions:

- to raise awareness of sensitive habitat located on or near private lands
- to promote landholder stewardship of sensitive habitat located on or near private lands

Evaluator's Comments

The program coordinator felt that the long-term goals (encouraging binding conservation agreements and catalyzing the formation of neighborhood stewardship groups) were clear. She felt that in the process of meeting with landholders, there had to be flexibility because the coordinators were not sure how the landholders would react to the project and what they would be willing to do.

Recommendations

When developing program goals, each goal ideally contains one action, a time frame, and a target group. Then the specific objectives for each goal can be developed accordingly. For example, "The landholder stewardship program will raise awareness among landholders adjacent to Morrison Creek of sensitive habitat located on or near private lands in the Morrison Creek watershed during 2000."

Were the goals precise and measurable?

Evaluator's Comments

The goal stated in the project proposal is clear enough to give direction to the program. However, there may be ways to make the goals more measurable, which would be beneficial to determining the effectiveness of the program.

Recommendations

To increase the precision of the goals, one might define the meaning of all words that are not commonly used. Examples include "sensitive habitat" and "landholder stewardship." Using common language would give landholders a clearer understanding of the program's intent and how they might participate.

Clarifying the phrases "to promote landholder stewardship" and "to raise awareness" would also help make the goal measurable. How will we know when we have promoted landholder stewardship? What are the indicators of an elevated level of awareness?

Were the implementation objectives clear, precise, and measurable?

Evaluator's Comments:

The objectives are activities to be completed to achieve the project outcomes. Defining the objectives to make them measurable is important. One of the revised objectives is "200 landowners will be contacted." The type of contact the 200 landowners will receive is not clear. It is hard to measure this as "contact" is not defined. The pledge is another example. If the pledge were clearly defined, measurement and follow-up in future projects would be possible.

One challenge is to determine the time and resources required to complete the measurements. For example, one of the objectives is, "500 hectares will be under pledge." It is not clear why this indicator was not measured; two potential reasons are lack of time and difficulty in completing the measurements.

Recommendations

Define the objectives clearly and quantify them so that they can be measured. Insure that there are time and resources to complete the measurements of the objectives as in the '500 hectares' example.

2. Data Collection and Storage

The objective was to maintain basic information on all landowners contacted through the development of a landowner contact database.

Past and present landholder stewardship coordinators had these comments:

There are lots of things I would do differently the second time around. The database fields should be more specific. It would be useful to break out into specific categories where you could check a box as in this example: What is the main area of landowner interest? Categories could include Naturescape, riparian planting, erosion, etc. Then you could do a search or query to find out who and how many were interested in what topics. We could also use a nested form for a list of species observed on the property.

I want to keep a clearer record of the site visits, as these are the focus of the program. Using lot descriptions is too cumbersome and the database wasn't linking up with all of the reference map numbers. I want to be able to use a map number as a reference.

Not all data was entered into the database (specifically, information on participants who received a hand-delivered package). It would be interesting to have detail on the response of these participants. For example, did they respond differently because someone talked with them at their door about the program? Do they require potential follow-up?

Regarding the data form, they said:

The data sheet should reflect the database to keep the quality of data consistent. Next time we might try doing it with a laptop. Maybe we could do the site visit directly onto the laptop and give a copy back to people. The challenge is getting people to sit down for a few minutes.

I want to add the purpose of the visit and the outcome (what actions the landholder will take as a result of the visit, additional actions required by the coordinator). The form also needs a specific field for the pledge.

Evaluator's Comments

It is clear that some of the database design could have been done differently. There were some gaps; data not entered, additional fields that would have been useful. However, this program made a significant contribution in the initial design and set-up of the database. In discussions with the past coordinator, the issue of time constraints came up in several areas. The coordinators were challenged to balance contact with landholders and data base development and entry.

Recommendations

Database design and data entry sometimes takes longer than planned. When wrapping up the project, this area may have received less priority. Yet accurate data is key to building on past work, designing future programs, and measuring program effectiveness. Changes to the database design could incorporate fields relevant to future programs and evaluation. When planning timelines and seeking funding, adequate resources for data work is important to the success of the project.

B Outcomes

In the following section, italicized questions are from the landholder survey; they are followed by the results to each question.

1 Output Objectives

Revised Objectives	Results	Source
200 households will receive stewardship packages.	274 households received stewardship packages.	Database
200 landowners will be contacted	274 received information packages; of these, 59 streamside residents received a phone call, 25 streamside residents participated in a phone call and a property visit, and 190 received an information package only (some hand-delivered, some mailed).	Database
25-35 pledges will be gathered.	32 verbal pledges were made.	Database
500 ha will be under pledge.	This information was not gathered.	-
Interest in developing a conservation covenant (no objective given in revised objectives; in the original proposal, the objective was 12 landholders).	5 landholders have considered a conservation covenant on their property (of these, one had previously considered a covenant).	Evaluation Survey
100 people will participate in 2 watershed walks.	76 people participated in two watershed walks.	Project Report
Existence of an updated landowner contact database.	Existence of a landowner contact database, not completely updated.	Database, Project Coordinator

Evaluator's Comments

In terms of contact, the priority of this project seems to be to contact a large number of people with an information package, with a much smaller number receiving a personal visit. The output objectives do not clearly delineate between "receiving a package" and "being contacted." The type of pledge is also not defined in the objective.

Recommendations

The objectives need to be clearly defined.

2 Tools and Activities

The Project Advisory Group

The project coordinator's comments: *The purpose of the project advisory group was to get input on the project, to liaise with other groups interested in doing landholder contact, and to work with the Regional District. We had two planning meetings. After the initial meetings, we consulted with individual advisory members as needed.*

A third meeting was an evening presentation to landowners, including people involved in the previous Morrison Creek mapping project; we introduced the streamkeeper program and gave project results back to the landholders. This led to rebirth of the Morrison Creek Streamkeepers.

Recommendations

When requesting this type of volunteer participation (advisory groups), it can be helpful to clearly state the role and duration of the advisory group. One advisory member indicated she would have liked regular, brief project updates. The activation of the Streamkeepers group meets one of the long-term goals of the project.

The Stewardship Pledge

We decided to go with a verbal stewardship pledge. People did not want a plaque. Those who were interested gave a non-specific commitment to stewarding or conserving their wildlife habitat. The initial intention was more formal, that we would have a pledge on paper, but we decided to try to go with the plaque. Again, our funding arrived late, creating pressure on our time line. It would have been good to try to get a clearer pledge, and it would be good to find a way to acknowledge people in some way. We recorded their pledged activities in a “friendly landowner practices” data field. For example, not using lawn chemicals or using native plants. We also provided specific ideas to people depending on where they lived in the watershed (rural or urban, upper or lower watershed). In all cases, we talked about covenants.

Evaluator’s Comments

The response to the pledge in this program was consistent with past projects in this community; individuals did not want to be ‘in the limelight;’ they did not want a plaque or any form of public recognition.

Recommendations

It may be useful to research ways to recognize landholders that would be agreeable to them. In addition, it would be helpful to know what motivates them to make a pledge. Written commitments have proved to be more effective than verbal commitments. Written commitments would also be useful for post-program monitoring.

Telephone Contact

In the brochure, we invited people to contact us about the project; we had a few calls. Streamkeeper group members called. We made calls, targeting streamside contacts. We tested our approach with a receptive landholder and then approached others we knew to be receptive. For elderly people, two people were seen as threatening, but they agreed to make a pledge over the phone. All site visits were streamside. We did as many as time allowed.

Evaluator’s Comments

The way the site visits were set up influences the results of the evaluation. Using information from a previous mapping project, the coordinators contacted streamside landholders known to be sympathetic or interested in stewardship. It is not clear if the primary emphasis of the landholder stewardship project was motivate landholders who were already somewhat interested in taking the ‘next step.’ The pre-program attitudes and behaviors of this group are unknown. What is the role of the program with people who have no previous exposure to stewardship values or activities?

The Information Package

Survey Question: Do you remember receiving the package?

<i>Response</i>	<i>Yes</i>	<i>Total Completed</i>	
Streamside (Property Visit)	22	22	100%
Non Streamside	28	51	55%
Total Morrison	48	73	66%

We hand-delivered many of the packages because the properties were close together and it was easy to do. The face to face contact was beneficial. Hand-delivery also saved us time; otherwise we would have had to research mailing addresses. We knocked on the door, and tried to hand them to the occupant in person. Because the watershed had been mapped, giving them the map was a nice ‘in’. If people introduced themselves, we made a note of their names in the database. Otherwise we did not have time to research all of the names.

Evaluator’s Comments

It is interesting to note the difference of package memory between streamside and non-streamside responses. It is not clear if this difference is a result of personal contact during the property visit. The difference might be attributed to the fact that streamside respondents live along the creek and therefore are more interested in issues regarding the creek. The face to face contact during hand delivery of the package to non-streamside residents may influence their interest in the program as well.

Recommendations

Based on the goals and objectives of the project, decide if an information package would be the most effective activity. Using information packages in conjunction with some type of personal contact or other project exposure might be the best option.

Survey Question: Can you briefly describe your initial reaction to being approached about the Morrison/Arden watershed?

	# of responses
It's a good program.	15
I was interested.	8
I am glad that someone is doing something.	8
I felt surprised.	3
I felt okay about it.	3
I was interested and willing to cooperate.	3
I was curious.	2

One person made each of these comments:

I anticipated it, I am glad that it is paid work for people, I was pleased to be a part of it, I was a little leery at first, then felt good about it, I was apprehensive: I thought we would have to change our practices and I did not want to be reproached, I was interested but too busy, I reacted to the inaccuracies, I wanted information on erosion, "Why me?"

Evaluator's Comments In this question and in the 'brochure interest' question below there were several people who commented that 'someone is doing something' about the creek. The idea that someone else is taking responsibility for the creek may cause some people to think that they do not need to take responsibility.

The Brochure

Survey Question: Do you remember the brochure?

<i>Response</i>	<i>Yes</i>	<i>Total Completed</i>	
Streamside (Property Visit)	13	22	59%
Non-Streamside	19	51	37%
Total Morrison	32	73	44%

Survey Question: How would you rate that brochure in terms of its interest to you?
(1= not at all interesting, 5= very interesting)

<i>Rating</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>Mean</i>
Streamside (Property Visit)	-	-	1	7	3	4.2
Non Stream-side	2	-	3	7	5	3.8
Total Morrison	2	0	4	14	8	3.9

Survey Question: What was interesting? Why?

The following comments are summarized from the respondents' comments.

of responses

It was put together well and provided useful information:	6
It showed that someone was doing something about the creek.	5
We are new to the area and it gave us information.	3
It interests me because I am a long time resident.	3

One person made each of these comments:

It gave details of the program, it interests me because I want to see the creek restored, it told me about the lamprey, it made people aware of the creek, I learned what stewardship means, I can do something on my own that doesn't involve government, the information was confusing and slanted, it was inaccurate and I wasn't sure of the goal of the program, it was not forceful enough in its reasons (for protection and stewardship).

Recommendations for the brochure and map are at the end of the following section.

The Map

100% of the respondents including all streamside and non-streamside residents remembered the map.

Survey Question: How would you rate the map in terms of its interest to you?

(1= not at all interesting, 5= very interesting)

Rating	1	2	3	4	5	Mean
Streamside (Property Visit)	-	-	2	3	11	4.6
Non-Streamside	-	2	4	11	10	4.1
Total	0	2	6	14	21	4.3

Survey Question: What was interesting about the map?

of responses

It showed the length or route of the creek.	9
It showed the origin of the creek.	8
We were interested in finding our house on the map.	6
The map is inaccurate.	5
It showed the creek in relation to roads and development.	4
It gave me a view of the general area.	4
I liked the aerial view.	4
We have it on our wall.	3
It shows trail access to the creek.	3
It shows the sensitive habitat areas.	2
I can see other creeks in the area.	2
It gives good detail and is readable by anyone.	2
It gave me a better appreciation of the watershed.	1
I am interested because of my work involvement.	1

Evaluator's Comments

The intent of the questions on 'interest' was to determine what people recalled about the brochure and map one year later. Streamside respondents rated a higher interest in the brochure and map than non-streamside respondents. All respondents had a better memory of the map than the brochure. All rated their interest in the map higher than in the brochure. The

length, route, and origin of the creek, and where the residence is located in the watershed were interests mentioned in relation to the map. Several people indicated that they had the map up on their wall. The map clearly engaged people.

Recommendations

These are some ideas to build on the success of the map:

- Put historical and ecological information on the back of the map. What was the creek like before urban development? Are there areas of the creek that are now underground?
- Design the map as a poster to be placed around the community.

Here are some ideas for the brochure:

- To address the “I am happy someone is doing something” attitude, rework the project brochure and other promotional tools to have a stronger impact by using vivid, concrete, personal, visual examples. Here is an example from McKenzie-Mohr and Smith related to home energy efficiency: *You know, if you were to add up all the cracks around and under these doors here, you would have the equivalent of a hole the size of a football in your living room wall.* Find ways to put the resident into the picture of the watershed. The materials need to engage people as well as inform them.
- Develop a press release instead of a brochure.
- Put the contents of the brochure on the back of the map.
- Design it in a newsletter style.
- Create a "keepsake" publication with historical information and stories from long-time residents.
- Offer volunteers the opportunity to design the brochure.

Watershed Walks

Survey Question: Did you participate in one of the watershed walks?

4 of the streamside respondents participated in a watershed walk. None of the non-streamside respondents participated in a watershed walk.

Survey Question: How much did you learn about the watershed habitat issues while on the walk?

Of the 3 respondents who answered this question, 2 gave a rating of 4/5 and 1 gave a rating of 3/5.

Survey Question: If yes, What did you learn?

- I learned about different things at different points along the creek, and saw fry.
- I was interested in the beaver ponds area, and have gone back with my granddaughter twice since. The springs are also interesting.
- I learned about the importance of not having an impact on the natural flora.

Survey Question: If no, why did you choose not to participate in the watershed walk?

of respondents

Other commitments. 7 (Church and children were mentioned here).

Wasn't aware of it 6

Mobility, physical health. 4

One person made each of these comments: I prefer solitary activities, I have other interests.

Survey Question: Would you participate in future watershed walks?

Rating	Yes	%
Streamside (Property Visit)	14/22	64%
Non- Streamside	22/51	43%
Total	36/73	49%

Project Coordinator's comments: *The first watershed walk was advertised through newspaper articles and word of mouth. A lot of retired people and members of the naturalists' club attended. Content included information on the upper wetlands, the source of the creek, unique features of Morrison Creek, plants, beaver dams, anecdotal stories, and the impact of highway development. We provided follow-up to six people. The second walk was promoted through email lists, contacts, radio stations, and a poster campaign. A broader representation of people participated. For example, there were more streamkeepers. Content: included information on Rivers Day, the lower watershed, fish in the system, restoration work completed by the school and Fish and Game Club, and historical information. My recommendation: get more young people on the watershed walk, schedule during the week and approach schools.*

Evaluator's Comments

Of those who participated, all were streamside respondents. It would be interesting to know why streamside residents only participated. Did they participate because of the influence of the property visit, or because they are more interested in the creek? It would also be useful to know if most of the participants were retired or if the activity attracts people of different ages and income brackets. Age (old age) and children were popular reasons for not participating.

Six people commented that they had not heard of the watershed walk, and 49% of the respondents said that they would be interested in participating in a future watershed walk. Finding a way to reach people about this type of event seems to be the challenge. Not everyone reads the community papers, a commonly used vehicle for event promotion.

Recommendations

49% said they would participate in a future watershed walk; using innovative ways to let people know about the walks may increase participation. It may be beneficial to plan walks with a focus on seniors who are less mobile. Senior watershed walkers in could be featured in newspaper articles. Perhaps there are other community venues which attract seniors and which may be potential places to attract participants. Another walk could be geared to families, with information presented in a way that would appeal to children. It could be planned and promoted as an accessible family activity, or as a school field trip. School activities could begin to address the concern several respondents had about children throwing rocks at the fish and playing in the stream during the spawning season.

Workshops

Educational workshops were proposed but did not happen because of lack of time and resources. There is interest. Potential topics generated by streamside residents include Naturescape, native plants, building bat boxes and birdhouses, municipal planning bylaws, buffer zones and erosion-related issues.

3. The Property Visit

Expectations of the Visit

Survey Question: When you received a phone call from the coordinators, what did they tell you would happen during the visit?

	# of responses
They wanted to have a look at the creek.	6
They would talk about the types of plants on the property.	4
They wanted to talk about the creek.	3
They wanted to talk about the animals.	2

One person made each of the following comments:

They wanted to suggest how we could help, they would tell us what we should and should not do along the creek, they wanted to look around the property.

Survey Question: Was the visit what you expected?

Rating	yes	mostly	no	don't know
Total	14	1	1	3

The Coordinators

Survey Question: Were the coordinators courteous?

Of 21 respondents, 20 gave a rating of 5/5 (very courteous) and 1 gave a rating of 4/5.

Survey Question: What did the coordinators do well?

	# of responses
Informative.	4
They were interested in what we know.	4
Had other information available.	3
Explained the importance of maintaining riparian plants.	3
Were knowledgeable.	2
Explained purpose of program and what we could do to help.	2
Had plant knowledge and list.	2
Talked about the creek.	2
I don't remember.	2

One person made each of these comments. The coordinators:

Were very respectful, followed up on info we had requested, were courteous, were interested in the whole balance, not just fish, were helpful but not pushy, did not make me feel I had to go to meetings, explained covenants, answered my questions.

Survey Question: Were you comfortable having the coordinator on your property?

All 22 of the site visit respondents surveyed responded "yes".

Evaluator's Comments

Respondents had only positive comments about the coordinators and their role in the property visit. One respondent mentioned that she had been advised by a friend who lived in another area not to participate because the landholders would be told to change their practices.

Recommendations

The impression left by the coordinators during every aspect of the project can influence the success of present and future community projects (even if they are not the same type of project).

Additional Resources

The coordinators brought a variety of written information to the property visit. Distribution depended on the landholder's area of interest.

Survey Question: Did you receive any brochures or other written information or contact names from the coordinators?

13 respondents said they did receive additional information or contact names.

Survey Question: How useful was the written information or contacts you received from the coordinators?

(1= not at all useful, 5= very useful)

Rating	1	2	3	4	5	Mean
Streamside	-	1	1	5	2	3.9

Survey Question: What was useful?

One person made each of these comments:

Plant inventory, explanations of what stewardship is, pamphlet on the streamkeepers course, information on bats, information on water snakes, and how to build birdhouses.

Of those who answered this question, 4 people said they had put the information in a file and had not used it.

2 said they were already knowledgeable before the site visit.

3 people could not remember what was useful.

Recommendations

Although respondents said the information was useful, several commented that they had filed it without reading it. It may not be worthwhile to prepare and distribute extra resources at the property visit. Perhaps this information could be shared during workshops.

Feasible Ideas to Increase Habitat

Survey Question: Do you want your property to be more wildlife or fish friendly?

14 respondents said yes, 8 said no (these said their property already had enough healthy habitat).

Survey Question: Did the visit leave you with feasible ideas about how to make your property more wildlife friendly?

10 respondents said yes.

Please explain:

of respondents

3 Use native plants.

2 Leave things alone.

One respondent made each of these comments:

Learned about things I can do to attract birds, don't use chemicals, I would like to plant a bunch of trees, plants to attract butterflies, do not plant exotics, have as much shade as possible along the stream bank.

4. Landholder Actions on their Property

Survey Question: In this question, we are looking at home and garden activities you did before and after the site visit.

Activities	Pretreat-ment	Morrison before	Morrison after	% Change
Let an area grow wild	22 (55%)	17 (77%)	18 (82%)	+5
Use native plants	23 (58%)	6 (27%)	6 (27%)	0
Compost	24 (60%)	13 (59%)	14 (64%)	+5
Use garden chemicals	9 (23%)	6 (27%)	6 (27%)	0
Leave buffer along creek	14 (35%)	19 (86%)	19 (86%)	0
Considered a Conservation Covenant	3 (8%)	1 (5%)	5 (23%)	+17

Survey Question: As a result of this site visit, is there anything else you or your family does differently at home?
6 responded yes, 16 responded no.

If yes, what?

- The trees are getting old so I planted some willows. I am more conscious of the stream being there.
- We leave one side of the creek wild. We understand why we shouldn't remove the trees and why we shouldn't put anything in the creek.
- I am more aware.
- I have planted some plants to attract butterflies.
- I considered clearing the banks of the creek. Now I have decided to leave the salmonberries.
- Don't put chemicals in the creek, chase the kids out. I may try some willow wattling. I plan to use native plants after my home renovations are done.

Evaluator's Comments

Letting an area of the property grow wild and learning how to compost were areas where two people changed their practices. The greatest change occurred in landholders' consideration of conservation covenants. Some respondents also mentioned an increase in awareness. Three people who were previously reluctant or not very interested (according to the coordinators' property visit comments) indicated they had made changes on their property as a result of the property visit (planting trees, leaving the riparian buffer, and letting the salmonberries grow).

Recommendations

The property visit is one of the most successful aspects of this project. It may be useful to determine specific barriers (other than landholders' perceived barriers) to the desired backyard practices and then look at other methods to incorporate into the property visit. For example, different ways of formatting the message about stewardship can have different impacts on people's response. See McKenzie-Mohr and Smith for additional ideas.

5. Involvement in Stewardship Activities

Survey Question: Before this property visit, how much did you know (non-streamside/pretreatment: "How much do you know...") about conservation or stewardship issues in the Comox Valley?

(1= very little knowledge, 5=very knowledgeable)

Rating	1	2	3	4	5	Mean
Streamside (Property Visit)	9	2	4	2	5	2.5
Non-streamside	15	8	16	3	1	2.6
Total Morrison	24	10	20	5	6	2.4
Pretreatment	9	9	10	4	3	2.5

Survey Question: Are you involved in any stewardship or conservation issues in the community?

Response	Yes	Total	%
Streamside (Property Visit)	6	22	27%
Non-Streamside	5	51	10%
Total Morrison	11	73	15%
Pretreatment	3	40	8%

If yes, what?

Morrison Creek:

4/22 (18%) described activities they do on their own: 2 keep an eye on the creek and 2 are active in their own backyard.
 2/22 (9%) are involved in activities related to stewardship through their work.
 6/22 (27%) are involved in organized activities: 2 are in a streamkeeper group and 2 are involved in other conservation organizations.

Pretreatment:

2/40 (5%) are involved in activities they do on their own: 1 keeps an eye on the creek and 1 is active in their her own backyard.
 2/40 (5%) are involved in organized activities.

Survey Question: As a result of this visit, have you become involved in other conservation activities in the community?

2 responded yes, 20 responded no.

If yes, what?

- Project Watershed
- I was invited to participate in a Morrison creek project, but they never called back.

Evaluator's Comments

Streamside respondents seem to have a greater level of involvement in stewardship issues. Demographics of both groups might shed some light on this difference. One of the evaluation research questions was to see if this project led to landholders' involvement in stewardship activities other than those taking place on their property. The project may have influenced participation in organized activities. Two people were motivated to participate in organized stewardship activities after the property visit. In addition, some activities in this project played a role in the re-activation of the Morrison Creek Streamkeepers (see *Tools and Activities: Project Advisory Group*).

Survey Question: What prevents you from becoming more involved in conservation or stewardship issues?

Comment

Number of responses
 Pretreatment Morrison

Comment	Pretreatment	Morrison
Lack of time/other commitments	17	42
Age (old age)	3	12
Other interests	1	11
Children	1	9
Not interested	2	7
I am not a "joiner"	-	5
Physical health	2	5
I am active on my own property	-	3
Work out of town	-	2
Lack of information	-	2
Negative personal impact from past involvement	1	2
I value my personal privacy	-	1
Lazy	1	1
Nobody asked me	-	1

Note: The author wrote down the respondents' comments and grouped them into categories. Some respondents gave more than one comment.

Survey Question: Would you like to become more involved in stewardship or conservation issues?

Rating	Yes	
Streamside (property visit)	9/22	41%
Non-streamside	19/51	37%
Pretreatment	11/40	28%

If yes, what would you need in order to become more involved?

Comment	Number of responses	
	Pretreatment	Morrison
More time	3	19
More information	4	8
To know about specific opportunities	3	3
To be contacted when specific activities become available	-	2
More notice of events	-	2
A change in work schedule	-	2
Activities suitable for me	1	
A change in health or mobility	-	2

Evaluator's Comments

Respondents understood that this question referred to organized community activities. Lack of time, age, other interests, and children were the primary reasons given for lack of participation in organized stewardship activities.

Recommendations

Despite perceived barriers to involvement, over 1/3 of respondents said they would like to become more involved in stewardship issues. Focussing on specific backyard activities and events that benefit the participants in some way may help. Polling landholders on their interests may be useful. More time and information were cited as prerequisites for involvement. Perhaps landholders need to know what we mean by stewardship. Program planners might start with what is relevant to people in their daily lives, and include activities that can be done at home. Landholders' comfort level with the organization initiating the activities may be a factor. The project needs to be well organized and promoted. People may respond if they know that even doing a little bit is a good thing.

6. Attitudes and Awareness towards Habitat Protection

How much did you know about wildlife and/or fish habitat on your property?

Before the site visit:

(1= very little knowledge, 5=very knowledgeable)

Rating	1	2	3	4	5	Mean
Streamside (Property Visit)	3	3	5	6	4	3.2
Non-streamside	16	8	9	3	9	2.6
Morrison	19	11	14	9	13	2.8
Pretreatment	7	4	9	8	7	3.1

After the site visit:

Rating	1	2	3	4	5	Mean
Before	3	3	5	6	4	3.2
After	1	1	4	10	5	3.8
Change						.6
Change re: pretreat-ment						.7

Evaluator's Comments

People who choose to live by the creek may already have more awareness about the creek. There may be demographic differences between streamside and non-streamside dwellers. The survey results indicate that the respondents perceive that their awareness of habitat issues increased as a result of the property visit.

Survey Question: What are your thoughts about protecting fish and wildlife habitat?

This question was asked to see if it would elicit attitudes towards protection of fish and wildlife habitat.

Morrison Creek:	# of Responses
It is important/very important/critical/crucial.	37
We keep an eye on the creek.	7
It is a good idea.	7
We need to do it for other creatures & for future generations.	6
Development has its price.	4
I have family in the fishing industry; important.	3
Sometimes environmentalists go overboard.	3
It is not good when children play on the banks or throw rocks at the fish.	3
I don't have the time/leave it to someone else.	3
Protection needs to be in balance with development.	2
It should have protection, but I don't know how.	2

One person gave each of the following comments:

I would participate in conservation activities, but I am afraid I would be judged because my spouse is in the fish farming industry, I am concerned about seepage into the creek from the old Courtenay dump, located under the duplexes on the hill on First Street, I like the type of work done by the Fish and Game Club, and in Black Creek, children are very interested in this type of thing, I am concerned about the impact of the development of new subdivisions.

Respondents' ideas for activities

- More should be done regarding providing alternatives to garden chemicals (2 people).
- A school program for kids.
- More education on habitat issues in urban areas.
- More individual walking or monitoring of the watershed.
- A tax break for people who honour the buffer zone on their properties.
- When developing, build up, not out.

Pretreatment Group:	# of responses
It is important/very important/critical/crucial.	18
I have family in the fishing industry; it's important.	4
Protection needs to be in balance with development	3
We need to do it for other creatures & for future generations.	3
Any water quality issues are priority.	2
Erosion is a problem and can be costly to the LH.	2

One person made each of the following comments:

The fish are nonexistent in Brooklyn Creek or do not survive, the creek receives chemical runoff from Crown Isle Golf Course, my neighbors are not too conscious of the creek, somebody has to do it, we need to do more, I am too old to do much, its good for sports, recreation, and tourism, I do not like the Ducks Unlimited mentality, I am appalled at the pollution in the creek, all districts should have bylaws and rules that keep them on a level playing field, proper streams, not ditches, should have buffer zones, start with children in the schools.

Comments:

Fish and wildlife habitat protection are very important to most of the respondents. Please see the conclusion for a note on this point.

7. Unintended Outcomes

Long-term streamside residents shared their historical knowledge of the creek with the coordinators. They could be a valuable resource in the development and implementation of future projects and educational materials. Their involvement might also assist in knowing how best to approach other community members.

According to a Morrison Creek landholder, a resident from another community recommended that she refrain from getting involved in the project because she would be told to change her activities on the property. The results of community projects can impact present and future initiatives, and the experiences and perceptions of neighbors and friends can be powerful influence on the choices people make.

Landholders may actually feel less responsible because they perceive that the problem of declining habitat is being taken care of by an organization (several respondents noted that they were happy that someone was doing something about the creek).

4. ADDITIONAL RECOMMENDATIONS AND CONCLUSION

There are suggestions throughout the *Results and Discussion* section above in addition to the suggestions below.

Program Design

McKenzie-Mohr and Smith note that enhancing knowledge or altering attitudes may not lead to behavior change. “Numerous studies document that education alone often has little or no effect on sustainable behavior.”¹ Designers of landholder stewardship programs might consider taking a social marketing approach, which focuses on encouraging behavior change through a variety of techniques.

Well-defined, measurable objectives are the key to a successful project. The lack of distinction between different types of contact, non-defined tools (pledges) and the variety of factors (streamside, non-streamside, phonecall/ no phone call, mail/hand-delivered) made it difficult to evaluate impacts.

Program planners need to identify what behaviors they want to change and who is most likely to change. Secondly, barriers (in addition to landholders’ perceived barriers) and benefits to behavior change must be identified.

“While significant pressures exist to skip this step, the simple truth is that it is impossible to design an effective strategy without identifying barriers...The four most common reasons for skipping barrier identification are:

- The belief that barriers to an activity are already known,
- Time pressures,
- Financial constraints, and
- Managerial staff who do not support conducting preliminary research.”²

Thirdly, appropriate behavior change tools need to be chosen. Examples are pledges (commitments) and personal contact. McKenzie-Mohr and Smith recommend starting with the desired behavior and working backwards to select a tool suited to gain that behavior change. Piloting and evaluation are the remaining steps.

Involving community members in the design of the project would be beneficial. Not only would their participation give guidance to the project, it may enhance their own commitment to the changes sought by the project. If project

¹ McKenzie-Mohr, Doug, and Smith, William, *Fostering Sustainable Behavior: An Introduction to Community Based Social Marketing*, p 9

² *ibid.*, p 43

coordinators ask for volunteer participation on an advisory committee, the role and time commitment needs to be clearly defined.

The coordinators felt that time constraints effected the way they implemented the project. Program planners need to develop realistic goals given the resources available.

Choosing Tools

Pledge - Asking for a pledge or commitment is one effective tool for behavior change. Written commitments are more effective than verbal commitments.³ Asking for a commitment and actively involving the person is even more effective, as is requesting a commitment and asking the person to involve their neighbors. Commitments can be sought only for behaviors people are interested in doing; they will not work for people who feel pressured to commit.⁴ In this project, we cannot be sure if the pledge led to attitude or behavior change, or if it increased awareness.

Personal Contact – Of all of the tools used in the project, the property visit seemed to have the most impact in encouraging landholders to change their practices. Response to the property visit was very positive, and some respondents felt they had changed some behaviors as a result of the site visit. “Research on persuasion demonstrates that the major influence upon our attitudes and behavior is not the media, but rather our contact with other people.”⁵ The telephone call and the hand-delivery of information packages may have had some influence, but these were not evaluated. Program coordinators could involve volunteers in a leadership role in the program; neighbors talking to neighbors. Coordinators could also collaborate with stewardship groups already active in the watershed.

Educational Materials –Information-based campaigns are ineffective if not combined with other tools. Perhaps this explains the difference in response between those receiving an information package only, and those receiving a package, a phone call, and a site visit. The map engaged people, and perhaps contributed to an increase in awareness of the watershed, but we do not know if it led to an attitude or behavior change. Brochure design and use and supplying additional printed resources to landholders during the property visit needs to be reviewed. In all printed and spoken communication, attention to the way the message is framed and using vivid images enhances their effectiveness. “Before you craft your message, you need to know the attitudes, beliefs, and behaviors of your intended audience.”⁶

One needs to be cautious when stating the impact the tools had on respondents’ attitudes, awareness, and behaviors. Perhaps not all impacts were positive. Information can be used in many ways.

Connecting Themes

The respondents, for the most part, seem to want to stay home or close to home. A majority of respondents commented that protection of fish and wildlife habitat is very important. Many said that time is a major barrier to involvement in stewardship issues, yet over one-third said they would like to be more involved in stewardship issues. They seem interested in their own backyards, and when approached during the property visit seemed interested and somewhat ready to make some changes. However, they are not that interested in participating in organized watershed activities (meetings are a particular deterrent for some).

Perhaps supporting the development of informal neighborhood groups or neighborhood picnics and workshops would be effective. Family events could include seniors and children, and provide information on topics requested by community members. Creative backyard workshops on erosion control, gardening with native plants and value-added plants might attract interest. Hosts could be responsible for inviting other families. There is a need to develop creative project activities, which respond to the interests and attitudes of the participants. CV CARE’s Septic Socials, which promote behavior change about septic systems, would be a good model.

³ *ibid.*, p 53

⁴ *ibid.*, p 56

⁵ *ibid.*, p 95

⁶ *ibid.*, p 87

Conclusion

It is difficult to measure the impact the project had on attitudes. It is also hard to say if the project led to increased habitat protection. A biophysical study gathering baseline data is currently taking place in the watershed; this will help to measure future program impacts on habitat protection.

However, it appears that the Morrison/Arden Landholder Stewardship Project contributed to an increase in awareness among residents about the watershed and habitat issues, and an increase in stewardship practices. In addition to its accomplishments, the lessons from the implementation and outcomes of the landholder stewardship project provide a solid base for future program development.

The more I become aware, the better I feel about (fish and wildlife protection).

Morrison/Arden Landholder Stewardship Project Participant

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APPENDIX

Recommendations for Future Evaluations

Here are some ideas that resulted from this evaluation:

- Plan for the evaluation at the beginning, while the project is being planned.
- Develop a shorter set of research questions, a shorter survey (if a survey is being used), and call more respondents to make the sample statistically relevant.
- Take time to review and test the questions to be sure that they elicit the required information.
- If resources allow, use more than one method; for example, use a focus group to add depth to the survey results.
- When working with evaluation participants, define words that may not be commonly understood; for example, stewardship and conservation.
- If the organization is doing other surveys at the same time, be sure that the sample groups do not overlap.
- Allow for ample time and resources to develop the database. Clearly define the database function from the beginning; for example, how will queries and comparisons be done? Does the database include enough information to mail a thank you to respondents? The database development and data analysis take a lot of time.
- Ask respondents for feedback on the evaluation.
- Involve advisors skilled in evaluation design and implementation; they are invaluable.
- Get input and feedback from the stakeholders as often as possible.

In-kind Contributions

Professional advisory time: 26.5 hours.

Non-professional volunteer time: 5 hours.