

A Guide to Watershed Planning on Prince Edward Island



Environment,
Energy and Forestry



A Guide to Watershed Planning on Prince Edward Island

Table of Contents

Executive Summary	3
1.0 Introduction	4
1.1 What is a Watershed and Why Should We be Concerned?	4
1.2 A Brief History of Land Use and Watershed Management on PEI	5
1.3 The Pitfalls of Watershed Management Without Watershed Planning	6
2.0 Getting Started	7
2.1 Getting Off to the Right Start	7
2.2 Recruitment and Retention of Community Members	8
2.3 Key Stakeholders	9
2.3.1 Large Landowners (primary audience)	9
2.3.2 Towns and Villages	10
2.3.3 Small Property Owners	10
2.3.4 Short Term Residents	11
2.3.5 Other Partners	12
2.4 Capacity Building and Partnership Development	12
2.5 Stakeholder Conclusions	13
3.0 Watershed Planning	13
3.1 Engaging the Community and General Public	13
3.2 Building Your Watershed Management Plan	14
3.2.1 Vision Statement	14
3.2.2 Guiding Principles	14
3.2.3 Issues and Concerns	14
3.2.4 Goals	14
3.2.5 Strategies	15
3.2.6 Measuring Success: Indicators	15
3.3 Conflict Resolution and Decision Making	16
3.4 Getting Down to Business:	16
3.5 Monitoring and Adjusting the Watershed Plan	16



4.0 Communications	18
4.1 Communicating Effectively	18
4.2 Measuring Results — Celebrating Your Successes!	18
5.0 Human and Financial Resources	19
5.1 Incorporating Your Group	19
5.2 Watershed Organization Resources	19
5.2.1 Board of Directors, Executive or Similar Governance	19
5.2.2 Administration	20
5.2.3 Facilitation	20
5.2.4 Executive Director and or other paid staff	20
5.2.5 Community Steering Committee	21
5.2.6 Volunteerism	21
6.0 Government Resources	22
6.1 Land Use Information and Mapping Services	22
6.2. Technical Assistance and Advice	22
6.3 Financial Assistance	22
6.3.1 Watershed Management Fund	22
6.3.2 Greening Spaces Program	24
6.3.3 Environmental Futures Program	25
7.0 Other Resources	25
7.1 Financial Assistance	25
7.2 In-Kind Resources	25
8.0 Conclusion	27
References and Appendixes	28
Appendix 1. A History of Watershed Management on PEI	28
Appendix 2. Time line of PEI Watershed Management History and Highlights	30
Appendix 3. Watershed Planning: Typical Budget and Costs	31
Appendix 4 Watershed Planning Process Time line	32
Appendix 5. Ten Recommended Steps to a Healthier Watershed	34
Appendix 6. Other and Web-based Resources (organizations, funding, programs, suggested reading)	36
Appendix 7. Glossary of Common Watershed Planning and Management Terms	38



Executive Summary

As Canada's smallest province, Prince Edward Island faces a number of unique environmental challenges. The Island has the highest population density in Canada and most of the land is privately owned. There are no true wild or untouched areas left on PEI and today, it can be best described as a mosaic or patchwork of farm fields and woodlands set against a mix of beautiful coastlines, rivers and bays.

The Island's economy is largely resource-based with many people depending on farming, fishing, aquaculture, tourism and forestry for their livelihood. This means that, to a degree, virtually every corner of PEI is developed. With development and population growth expected to continue, the need for more and improved watershed management is becoming a reality on PEI and many other jurisdictions in North America.

Over the last several decades, many people have expressed concern about land use activities which are negatively affecting PEI watersheds and thus the supply of potable water. The Island is totally reliant on groundwater for its water needs and although water is a public resource, water quality is influenced by factors such as property rights, environmental enforcement and economic developments. This often means there are no easy answers to the broad spectrum of environmental problems facing various Island watersheds. On one hand, our resource-based economy is reliant on a clean environment, yet at the same time activities of these same industries can impair environmental health. Somewhere in between Island communities need to find an appropriate balance.

Successful watershed management and planning is a community-based initiative which is dedicated to the protection and enhancement of our natural resources, particularly in terms of water quality. This guide was developed to assist community organizations in the watershed planning process.

In order to be successful, watershed management must be more than a project which deals with the symptoms. It must be an all-inclusive, community-driven process designed to deal with the issues and problems in that watershed. The planning process must be transparent and open to participation by all interested parties in order to build community buy-in and support for the process and the management plan. Ultimately, it should result in a management plan which is based on the community's goals for the watershed and which provides a guide to help citizens realize their vision. A communications strategy is vital to keep residents informed and up to date throughout the planning process.

Watershed planning requires extensive community input prior to the creation and implementation of a management plan. You will need to develop a vision statement and guiding principles before moving on to the main issues and concerns. Once these components are identified, you can develop effective goals and strategies. When the management plan has been finalized, you can begin to implement the recommendations and strategies. However, it is also important to monitor and report on your progress and to update the plan as conditions change within the watershed.



1.0 Introduction

1.1 What Is a Watershed and Why Should We Be Concerned?

A watershed is simply defined as an area of land that drains surface water and groundwater into a river or stream. Prince Edward Island has more than 250 watersheds which supply us with fresh drinkable water for our domestic and economic needs. Therefore, all Islanders have a collective stake in the health of Island watersheds because these areas are impacted by and in turn, influence human activities.



Watersheds need to be managed in a holistic way, which addresses both the symptoms and the sources. For many years, soil erosion was considered to be our most pressing environmental problem. While this may still be true, other issues are also getting the public's attention.

For instance, nutrients such as nitrogen and phosphate often enter the Island's water system from sources such as chemical fertilizers, manure and poorly maintained septic systems. In summer, these nutrients can cause explosive growth rates in many aquatic plant species. Eventually, the plants die and begin to decay, depriving the ecosystem of oxygen. This results in severe water quality impairment or loss of aquatic life and biodiversity and often creates a negative image of the Island's environment.

Clearly, the path forward will not be easy and the environmental problems facing Islanders are not going away any time soon. In order to improve the environmental quality of watersheds, comprehensive management strategies need to be developed and supported by local people who live and work within the area.

This guide has been developed to help volunteer community watershed groups address the human factor. It provides a "cookbook" with ideas and strategies on how to engage local people in watershed planning and how to "craft" the watershed management plan based on their input. Hopefully, this guide will also prove useful to other agencies, as well as academics, landowners and the general public because collectively, we all have a stake in the health of PEI's watersheds. Given resources and support, we are confident community watershed groups can and will make a difference.

*Filthy water cannot be washed.
~ African Proverb*



1.2 A Brief History of Land Use and Watershed Management on PEI

In order to pay off some of its debts from the wars of the mid 1700s, England divided the Island into 67 lots and gave them away in the Great Lottery of 1767. Landlords were required to colonize these lands and over the next century and a half, settlers cleared the forest to create farms, roads, villages and towns.

These people did not seek to harm the environment. They simply wanted to build a better life for themselves and their families. In most cases, they created farms with multiple small fields and produced many different crops, but often these fields ran down to the stream's edge or straight up steep slopes creating the potential for serious soil loss problems. Yet by early 20th Century, only about 30 per cent of the province remained under some form of forest cover. The loss of forest cover combined with changing social and economic pressures set the stage for many of the environmental problems we see in Island watersheds today.

Throughout most of the 20th Century, people left the Island, abandoning farms to move to areas which offered more opportunities. Forests began to reclaim these abandoned lands and by the early 1990s almost 50 per cent of the province was once again covered by trees. However, this new forest was very different from the original Acadian Forest because much of it was just one species, white spruce. While white spruce did stabilize the soil and create some wildlife habitat, it usually grew in dense thickets down to the water's edge. Often the entire stand would collapse and die within a very short period, so many dead trees would fall into the stream allowing silt to settle out



In order to create larger and larger fields, new industrial scale farming techniques led to the elimination of many hedgerows and shelterbelts, even in areas where high slopes caused serious erosion problems. Pressure to produce greater crop volumes from a limited land base led to increased use of pesticides and chemical fertilizers. The mechanization of farming operations also meant more opportunities for fuel and oil spills.

Beginning in the 1960s and 70s, many rural areas also experienced significant increases in their non-farming population. These people built homes and businesses in the watershed area but poorly maintained septic systems and domestic oil spills often led to serious water quality problems.

The earliest watershed management effort began in 1972 when the Morell and Area Land Use Steering Committee (MALUSC) became aware of a proposed cottage development along the Morell River. Subsequently, members of the MALUSC spent considerable time speaking to landowners about the



importance of “protecting” the river from development. With the backing from the majority of landowners, the MALUSC convinced the provincial government to protect the greenbelt or “conservation zone” for 60 meters on both sides of the river for a total of 44 kilometers. Eventually, the Morell River Conservation Zone was formally designated and protected under the *Planning Act* and remains so today. Over time, the Morell and Area Land Use Steering Committee was dissolved and became the genesis for the Morell River Management Cooperative, an organization which is still active.

Since then, many watershed management groups have been created to implement a variety of strategies and plans. While each group tried to improve their local environment, often they were only able to address some of the symptoms and not the root problems such as land use practices, groundwater contamination, soil erosion, anoxic events and pesticide related fish kills. Today, these problems are being compounded by increasing urbanization, industrial development and other factors in many rural communities.

As time passed, it became obvious that a more concerted approach to watershed management was needed, so in 2002, the province reassessed its existing program and made modifications to focus on a watershed basis. The Department of Environment, Energy and Forestry’s Watershed Management Section provides technical advice and financial support through the Watershed Management Fund (WMF).

For a more detailed look at watershed management efforts on PEI, see Appendix 1 on page 26.

1.3 The Pitfalls of Watershed Management Without Watershed Planning

The adage “*a good plan is not a substitute for a good process*” is an appropriate statement when considering the benefits of engaging the community in watershed planning. While a good plan can be crafted in isolation, if landowners and the greater watershed community were not involved or are not aware of such a plan, how can it succeed? Ultimately, in a truly inclusive, open and transparent process, most people will attach some ownership to the plan. If the “owners” of the plan want it implemented, it has a very good chance of making positive environmental changes. However, if no one attaches ownership, then it is doomed to fail.

*There are many paths to the top of
the mountain, but only one view.
~ Harry Miller*

Over the years, many watershed programs have focused on stream restoration and reducing sediment loads only to realize in a couple of years things have not really improved as they had hoped. It has nothing to do with the quality of their work — it simply means the root causes of these problems still exist because the people who live in the area have not changed their actions. Therefore, in order to affect real and positive change, these people must shift both their thinking and actions regarding the management of land and water. This change will only happen when they become aware of their impacts, get involved in watershed planning and ultimately make choices that do not impair the health of the watershed. The important thing to remember is that we all have a part to play in watershed management and if we are all involved in the discussions and agree with the plan, we will act as good stewards of the land.



It is also important to realize that through watershed planning, the community-at-large is embarking on a major learning curve. They learn about the issues and potential solutions to local environmental problems and, at the same time, they also learn about their neighbors and the difficulties many of them experience when trying to make a living in various resource sectors such as farming, fishing, tourism, forestry, etc. As result of this process, community participants often develop a deeper respect for each other and the different challenges they face. Many times this newfound understanding results in a more cohesive community, which is more likely to work together on many different issues.

Watershed planning at the community level should result in community buy-in and acceptance of the management activities which are clearly spelled out in a watershed management plan. This plan is a community document and must be readily available to everyone.

Having a watershed management plan which the local people support can serve many useful purposes such as:

1. Providing potential funding partners and agencies with a glimpse into planned activities over time. If possible, focus some effort on a major flagship project such as restoring a pond, creating an interpretive center, acquiring or protecting suitable lands, implementing education activities, etc.
2. Providing watershed residents with a clear plan that identifies the issues, corrective actions to be taken, time-lines and human and financial requirements. Although it is generally accepted that everyone must do their part and become good stewards of the land, there is often a need for a major education component for watershed residents. Residents should be encouraged to get involved in watershed planning meetings and to read the watershed management plan. When applicable, list the items and actions that everyone can do at home or on their property.
3. Giving the watershed organization a clear direction for restoration. Through watershed planning, the organization should be able to improve capacity and partnering and overall, have a much easier time recruiting new members, volunteers, sponsors, etc. If watershed planning is to be successful on PEI, the capacity of watershed groups must be improved.



2.0 Getting Started

2.1 Getting Off to the Right Start.

Over the past few decades, population growth, changing land use patterns and urbanization of rural lands have begun to stress many Island watersheds. Water quality and supply is critical to each and every one of us yet until recently it was something we largely took for granted. Today, many watersheds are experiencing serious problems related to unregulated development, soil erosion, pesticide use, nutrient management and loss of green space.

*If you ever think you're too small to
be effective, you've never been in
bed with a mosquito!
~ Wendy Lesko*



There are many reasons why people set up watershed management groups, but often, the catalyst is a serious environmental problem which is affecting water in their area. These people are usually concerned about the problem and eager to take immediate corrective actions. However, while this desire to move forward right away is admirable, it is often best to take some time and get more information before launching any major initiatives.

Before you act, consider the following questions:

- Have you clearly identified what the problem(s) is and why it is occurring?
- Can the problem be traced to one or a just few locations, or is it a problem which is wide spread across the region?
- Who will be impacted by remedial actions and how?



Even the best of intentions can be ruined if the process starts off on the wrong foot. Finger pointing, implementing strategies which are impractical or unaffordable, or proceeding without community support are usually recipes for failure. Watershed management planning works to protect water resources by empowering local people to work together for the environmental, social and economic health of their community.

2.2 Recruitment and Retention of Community Members

In order to recruit members, you must first make people aware of the issues facing that watershed and the need to take action. However, as indicated earlier your first steps need to show sensitivity and understanding for all of the people in the watershed.

There are many ways of getting your message out such as holding public meetings or open houses and inviting everyone who lives, works, or has an interest in the watershed to attend. It also helps to identify and personally invite all key stakeholders, community/opinion leaders and others to your event. A personal invitation is often the best way to get people to attend your meeting.

Some of the common communication tools you can use are:

- media (newspapers, community newsletters, tv and radio stories, etc.),
- mailing newsletters,
- posters,
- church and community group bulletins,
- internet sites, or
- kitchen table discussions.





Consulting with local people from the onset builds trust, support and understanding and thus, a stronger foundation for your group. The more information residents have about the “*Big Picture*,” the better equipped they will be to contribute and create an environment which provides a sense of order, clarity and fairness.

However at the outset, you may encounter resistance or even hostility from people who perceive that they are being picked on or that watershed planning will impact their livelihood and place controls on their land. Active participation from local community leaders can help to alleviate many of these feelings because they often understand local sensitivities and personalities. You may also wish to use a professional facilitator to serve as a buffer between the group and meeting participants. The facilitator should be a neutral third party who can help to focus the discussion, encourage participation, create trust and provide support and affirmation.

All water has a perfect memory and is forever trying to get back to where it was.
~ Toni Morrison

With the possible exception of a paid coordinator, most watershed group members will be volunteers. It is vital to ensure these people have a positive experience, a real sense of achievement and inclusion and plenty of recognition for their efforts. In order to make new volunteers feel welcome and ensure they understand your goals and strategies, you should consider holding a special orientation session for them.

Remember to clearly define the responsibilities and benefits of serving in the group. Do not make unfair demands of the members and always remember to recognize and reward their work and efforts.

Finally, today, most groups purchase general liability insurance to protect the group and its directors and officers. This will help to strengthen your members’ sense of security.

2.3 Key Stakeholders

Primary Target Groups

2.3.1 Large Landowners (primary audience)

Almost 90 per cent of the province is privately owned often in larger blocks such as farm and woodlots, so it is critical to build partnerships with the farmers and forest owners in your watershed. The size of the farm, the slope of farm fields, the types of crops they produce and how they manage nutrients, pesticides and other farming practices means that collectively, this group has the greatest influence on the health and well being of most Island watersheds. Their actions (or inaction) will have a huge influence on the success or failure of your group and plan.

The US Centre for Disease Control receives notification of more than 4,000 cases per year of illness due to drinking water contamination.

Many land owners have an intimate sense of local or traditional knowledge that can benefit the aims of the watershed group. Through active and broad involvement, the all-inclusive process approach can build on their sense of community, while reducing finger pointing and increasing their commitment to the actions which are necessary to meet your group’s goals. Work with them through the group and always recognize their achievements.



It is often best to use a measure of caution and sensitivity when discussing watershed issues and concerns with local landowners. They may have lived in the area for many years and frequently derive at least some of their income from their land. Often they already see themselves a good land stewards, or do not see your concerns as problems (*This is the way we've always farmed!*). They may be concerned about their rights as land owners, how any changes might impact their way of life, or that they may be portrayed as poor land stewards.

Most of these issues and concerns can be dealt with through good communication, respect, education and compromise. In fact, while people usually agree on what they would like their watershed to be in terms of its ecological health, other social or economic issues may temper their ability to realize that vision.



Woodlot owners usually do not make their living from their forests but they often obtain a wide variety of products and services from these woodlands. Often they have paid taxes on the land for several decades without seeing any financial returns. When a contractor or mill (Section 2.3.4) offers them a chance to make income by selling stumpage rights, they will often jump at the chance without first considering their harvest and management options. It is important to realize that ultimately harvest and management decisions are their's to make. However, you can help them to explore their options by connecting them with the many programs and services available to Island forest owners and if possible, help them to implement management options which support the goals of your group.

2.3.2 Towns and Villages

Most watersheds will include several small communities which have either a village council or a mayor and counselors. These communities are legal entities and thus they are responsible for needs and welfare of their citizens.

Water quality and quantity is often a concern for these communities and they can usually be valuable allies in watershed management. By including them in the decision making process, you can help to get your message out to a receptive audience which will support your goals and plans. For the community, it can also be a way to interact positively with neighbouring land owners who are not part of the town or village.

2.3.3 Small Property Owners

There are also many people who live full time within the watershed but do not make their living directly from the land. They may be retired, own a small local business, or live in the watershed



and commute to work in other areas. Often they have moved into the area from other places and may not be as tied to the community as other groups of people. Regardless, they still depend on local groundwater sources and are usually very interested in the quality of the local environment.

Improperly maintained sewage systems, fuel spills and improper use of lawn care chemicals can be problems for small property owners.

In many cases, this group will have a wide range of understanding about the activities which may degrade their watershed. These people are often an excellent source of information about the people, politics and heritage of the area and are often receptive to education opportunities such as field trips, workshops and guest speakers. However, again sensitivity is needed to ensure that one group is not seen as working against another.

Secondary Target Groups

2.3.4 Short Term Residents

There are also groups who can have an influence on the watershed without living there full time. Cottage owners typically only spend a few weeks in the watershed area but an improperly maintained sewage system can have serious consequences for local water supplies. Many cottages are built near water allowing fuel spills and lawn care chemicals easy access to the water system.

Forest harvest companies buy the rights to harvest standing timber (stumpage) from local land owners. Once the trees are harvested, they pay the land owner and move on to another woodlot. A poor harvest can cause ruts and siltation, while fuel or hydraulic oil spills can contaminate groundwater supplies. However, harvesting trees can also be good if the land owner has a good long term plan for their forest land, particularly for stands which are poor quality, dying (fire hazard), or which may fall into streams and rivers.

Land owners who have an up-to-date forest management plan are often aware of their forest management and harvest options but they tend to be the exception. Whenever possible, encourage local woodlot owners to have a plan prepared for their forest which meets their goals and also incorporates the goals of the watershed community. They can also provide the plan to their contractor to ensure that the work is done to standard.





Recreational users can be people who live in the watershed or people who visit for angling, ATV use, or boating. Some of these activities are neutral or even beneficial to the watershed, while other recreation uses can impact the health of streams, wetlands and soils. People who use the area for fishing or boating can be helpful volunteers who care deeply about the water. ATV's can be used to transport trees to a planting site or equipment to forest management areas. However, ATVs which are used in an inappropriate way or on improper sites can create serious damage such as erosion and ruts in wetlands, stream bottoms and river banks.

2.3.5 Other Partners

There could be nonprofit organizations, school groups, development groups, or companies in your area which may be interested in partnering with you and your group.



Successful watershed groups form partnerships with groups and local people who share similar interests and concerns. Partnership development is central to the idea and practice of watershed planning and management and should include anyone who has a stake in your watershed from the beginning of the process. However, for new groups, having too many involved partners can present many challenges.

2.4 Capacity Building and Partnership Development

Plan a strategy that will help your group build successful partnerships by taking into account the talents, skills and resources local stakeholders can provide for specific issues and concerns. Seek leadership, education and political experience from those who bring this asset to your group. Experience has shown that partnership approaches lead to more flexibility, increased co-operation, creative problem solving and faster decision making. Partnerships can also provide a spirit of fairness, shared financial resources and less negativity. But it takes time to develop successful partnerships and there may be plenty of bumps along the road.

There is no single organization in your watershed that can address all your key issues and concerns. That is why it is so important to continue to build partnerships to tackle issues as they arise or evolve. These partnerships should involve communities, other organizations, the provincial and federal governments, farmers, fishermen, tourist operators, industry, private landowners and the public because it takes buy-in from all partners in your watershed to help achieve your group's goals. The Prince Edward Island Network of the Canada Volunteerism Initiative works to improve the capacity of individuals and organizations. You can reach them by phone at (902) 886-2188, Toll-Free 1-866-568-2188, or by email: peivolunteernetwork@bbema.ca.



2.5 Stakeholder Conclusion:

Remember, there is no integrity in inviting public participation if the decisions have already been made! The watershed plan should be seen as a summary of their decisions and not a directive telling them what to do or think. Take advice from all groups and individuals and let them know where their input has been included in the plan. Getting public involvement will heighten your group's awareness level and give it a chance to become a high capacity watershed group.

Adopting a holistic approach in the initial stages will plant the seeds for a strong organization. Once these seeds have been planted, the ideas contained in *The Guide to Watershed Planning* will help you to strengthen your organization's ability to build capacity and allow it to grow.

Strong organizations attract talented volunteers and are more effective in the long term. Consider forming a legal body which is structured and conducted in a professional manner.

Use consensus-based approaches to develop a Vision Statement and refer back to your Vision Statement often. It ensures that everyone is aware of why the group exists and allows you to keep the group on track during the planning stages.

What makes a river so restful to people is that it doesn't have any doubt - it is sure to get where it is going and it doesn't want to go anywhere else.

~ Hal Boyle

3.0 Watershed Planning

3.1 Engaging the Community and General Public

We all live in a watershed, so our lives are affected by the activities which occur there. It is imperative that we engage the community and the general public when initiating watershed planning activities. Having stakeholders participate and buy into the process in the early stages is central to your success. When stakeholders have a voice in decision making they are more likely to make changes which will benefit all.

Your watershed plan also needs to be structured so that your vision, goals and plans for the future are clearly understood by all stakeholders. In this section we will explore the various components of a Watershed Plan and the role each component plays in the success of your program.





3.2 Building Your Watershed Management Plan

3.2.1 Vision Statement:

A Vision Statement is sometimes called a picture of your area in the future but it's so much more than that. Your Vision Statement is both your inspiration and the framework for all of your strategic planning.

The Vision Statement answers the question, *Where do we want to go?* It should be realistic, credible, well articulated, easily understood, appropriate, ambitious and responsive to change. It should serve as a guide to action, designed to challenge and inspire the members.

Example: *By the end of the decade, we will put a man on the moon.* ~ John F. Kennedy

From time to time you may have to refer back to this vision to keep people on track but as you make progress you may look at revising it to bring it into alignment with new realities.

3.2.2 Guiding Principles:

Your organization's Guiding Principles are an overview of how you intend to carry out the process of watershed management and planning. Guiding Principles may include statements on how particular issues will be dealt with, how good stewardship will be rewarded, or recognized, how the process will be presented to the public, a brief management strategy, additional components of the planning process, etc.

Example: *We Will Seek Perspective and Promote Working Relationships Between Industry, Government, Non-government Organizations, Communities and Other Key stakeholders to focus on responsible solutions to common problems and concerns.*
~ Dow Industries

3.2.3 Issues and Concerns:

Concerns about water quality and other environmental issues are usually the driving forces when communities begin to show interest in watershed planning. In some areas, the issues may be specific or long-standing problems. For others, the issues and concerns may be broad and include such things as forest harvesting practices, agricultural land use, industrial development, aquaculture, water quality, road construction and maintenance . . . the list goes on.

It is important to recognize that each watershed is unique, so each will have its own list of issues and concerns. Remember that priority issues and concerns should be those of the watershed community in general rather than those of an individual or group. Issues and concerns should be agreed upon and prioritized by consensus during facilitated planning sessions.

We never know the worth of water till the well is dry.
~ Thomas Fuller.

3.2.4 Goals:

Organizations need to develop short and long term goals for their watershed. Often the short term goals are those where real progress can be made over a 1 to 5 year time horizon. Longer term goals should produce measurable results over a decade or more. These goals will depend upon the issues and concerns identified earlier in the planning process and could include protecting and enhancing water quality, increasing the percentage of forested land, working with agricultural producers to



reduce nutrient and sediment inputs, restoring a once pristine stream, etc.

It is important that your goals and time frames are realistic and remember that these and other goals can only be realized through the efforts of the entire watershed community.

Example: *The Fund seeks to conserve terrestrial and marine biodiversity by protecting and restoring ecosystems and by fostering sustainable communities that pursue locally-appropriate development plans. ~ Rockefeller Brothers Fund*

3.2.5 Strategies:

Strategies act as a guide to help you reach your organization's goals. For example, a strategy to reduce nitrate levels in groundwater might include working with agricultural producers to improve the way they handle manure and chemical fertilizers or educating local homeowners about proper septic tank and field maintenance to reduce potential nutrient sources.

Strategies will need to be revisited and assessed on a periodic basis to determine if they are being effective. However, reducing nitrate levels in ground water may take a decade or more to see results; therefore, setting realistic time frames for some results may have to be part of your planning process.



3.2.6 Measuring Success:

Measuring the success of your activities can be relatively simple such as watching a restored riparian area return to forest, or more complicated such as measuring changes in specific water quality parameters over time. However, it must be realistic, practical and able to withstand scientific scrutiny.

Develop indicators within the plan which relate to your strategies, objectives and goals. A common question might be “*Is water quality in our estuary improving over time?*” In this instance, staff from the Department of Environment, Energy and Forestry can help you to set up an appropriate monitoring program and to interpret the results.

Adopt the pace of nature: her secret is patience. ~ Ralph Waldo Emerson.



3.3 Conflict Resolution and Decision Making

By following the procedures outlined above, your organization will reduce the chances of major conflicts. However, when different personalities, different ways of thinking and important issues are on the table, some conflict is bound to occur. Often these conflicts can be resolved internally, particularly if your organization includes people with conflict resolution skills, but some conflicts may require the services of a professional facilitator or mediator to bring together opposing views.

Remember: *Disputes do not have to mean you are failing! However, they may mean that you have more work to do communicating the goals and plans of your watershed group.*

3.4 Getting Down to Business:

Now the real work begins. The watershed management plan is not the end, it is a new beginning for watershed enhancement activities that have probably been taking place for some time. In many cases, the watershed management plan will not change the types of activities occurring on the ground but it will help to prioritize the group's activities.

*Failure is not falling down but refusing to get up.
~ Chinese Proverb*

Once the plan has been approved by the community, it is very important to reach out and let people know that their input was heard and valued and that the management plan, based on that input, is being implemented.

While it is important to implement your strategies, it is also crucial for the community-at-large to see the work on the ground. Try to keep the adage, “A plan is only as good as the process” in mind because the same process which led to the creation of the management plan is also critical to the ongoing management of the watershed.

3.5 Monitoring and Revising the Watershed Plan:

Although watershed management plans should cover a specified period (5 to 20 years), it is important to recognize that changes often require ongoing revisions to the plan. The plan is a “living document” and as such should evolve as required over time.

Monitoring is also an important part of any environmental improvement activity because it not only indicates how the plan is doing, but allows you to report on your results. While it may be unrealistic to measure all environmental improvements, the more information you have the greater your chances of continued success. As well, funding partners are usually reluctant to support projects that will never achieve measurable results.

In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about two weeks in lakes and rivers and less than a week in the atmosphere.

Table 1 outlines several typical watershed problems, potential solutions or actions and various monitoring strategies.



Table 1: Monitoring for Environmental Improvements

Identified Problem	Proposed Solutions	Monitoring Required
Soil erosion and sedimentation of watercourses from agricultural fields and public roads and structures	<ul style="list-style-type: none"> • increase forest cover • sensitive lands acquisition/covenant • enlarge riparian zones • winter cover crops in field • soil conservation techniques • stream restoration 	<ul style="list-style-type: none"> • GIS mapping/analysis • suspended solids/turbidity • sediment research plots - in stream • salmonid density studies - electrofishing
Nutrient over-enrichment in freshwater has led to anoxic events in fresh water impoundments and/or coastal waters	<ul style="list-style-type: none"> • increase and improve nutrient management activities • develop riparian zones on 1st order streams • sensitive lands acquisition/covenant • impoundment removal 	<ul style="list-style-type: none"> • freshwater nitrate - groundwater and surface water • chlorophyll analysis • subjective analysis - presence/absence, per cent cover, frequency .
Wildlife habitat loss - upland	<ul style="list-style-type: none"> • sensitive lands acquisition/covenant • enlarge riparian zones 	<ul style="list-style-type: none"> • GIS mapping • population monitoring





4.0 Communications

4.1 Communicating Effectively

Whether or not we are aware of it, we already know a great deal about communication. Every day we use communication skills to build healthy relationships at home, at work and in the community.

Begin by identifying the primary groups and individuals within your watershed (Section 2), then make a list of secondary targets. Develop your communication objectives and then the tools and strategies which can help you reach the desired audiences. For instance you can:

- Use effective visual tools, such as maps, photos, posters and videos.
- Develop reports and brochures which are engaging, easy to read and appealing.
- Attend local trade shows, community festivals and local schools.
- Organize fund-raising activities.
- Host regular scheduled open meetings.
- Use media* which fits within your group's budget — newspaper, radio, church bulletins, television, or even set up your own web page.

Remember news media are always looking for stories but be sure to identify how you want to deal with the story **before you contact them. If you are using local people and places for quotes or pictures, be sure they are on side and aware of what you are trying to do.*

Talking with neighbours, family members, church groups, community leaders, and political and government officials can be particularly helpful. Encourage comments, questions and suggestions or consider conducting one-on-one surveys of opinion and ideas regarding the watershed.

4.2 Measurable Results — Celebrating Your Successes!

It is very important for your group to stay up to date on the results of the watershed plan and all ongoing and planned activities. Evaluate your progress and communicate the results honestly and effectively back to your group in a timely fashion. Select an easy to do, or high visibility project such as the restoration of a pond, protection of a significant forest or wetland, or creation of an interpretive centre and use this as an opportunity to recognize the work of your group, the support of the community and the success of **their** plan.



For results which are not so easy to see, such as improved water quality, ensure that results are effectively communicated back to members, partners and the community on a regular basis.



Successes should be and must be recognized! Building a successful watershed group and implementing the plan takes time, skill and patience.

5.0 Human and Financial Resources

5.1 Incorporating Your Group

The task of setting up a watershed group has many different phases and aspects such as organizing your first watershed meeting, attracting volunteers and developing guiding principles. However, from the beginning you should also consider how your group will be structured and governed.

While it is not necessary for an organization to incorporate in order to function effectively and fund raise, many watershed groups choose to become a legal entity. This can help to obtain tax breaks and exemptions, access grants and donations, create bylaws and rules, secure liability insurance and set up effective Boards of Directors or advisory bodies.

A single tree will give off 265 liters (70 gallons) of water per day in evaporation. An acre of corn will give off 15,000 litres (4,000 gallons) of water per day in evaporation.

Most successful watershed management groups are structured organizations with an operating plan, staff and volunteers. They often rent or own office space in the watershed where they can conduct business duties such as correspondence, payroll, purchasing, budgeting, meeting space and general office support. In time, this office should become a recognized place in the community where people can access watershed information and services.

You should also consider the following skill sets and human resources when setting up the watershed management organization.

5.2 Watershed Organization Resources

5.2.1 Board of Directors, Executive or Similar Governance

A Board of Directors serves to govern the organization and usually provides oversight without becoming involved in day-to-day operations.

Additional responsibilities vary but generally the board also oversees policy, budgeting, planning, fund raising, human resources, program evaluation and board development. Committees of the Board can include a finance committee, program committee, development (fund raising) committee, human resources committee, nominating committees (future board members) and other areas depending on the needs of the nonprofit organization.

The board usually oversees the hiring of an executive director for organization and ensures that the director has room to lead.



5.2.2 Administration

Administration refers to the management of the organization's affairs. This may be paying staff, maintaining bank accounts, workers' compensation coverage, liability insurance, rentals, legal agreements and a host of other affairs or functions relating to the operation of a watershed group.

In order to focus on the core business, the group requires successful administration which can deal with business in a timely and efficient manner. Poor administration can create dissension and may put an added burden on the group. While administrative roles and responsibilities differ widely between organizations, the need to ensure the proper management of affairs is common among all organizations regardless of whether or not they are a nonprofit, or for profit corporation.

5.2.3 Facilitation

From day one, your watershed planning process should consider using a professional and experienced facilitator to help local people to exchange information, ideas and concerns in a positive manner and move the planning process along in an orderly and timely fashion.



Making progress takes time, since relationships need to be established, reinforced, or repaired. A good facilitator can move your group in this direction and most important, can diffuse difficult situations using a conciliatory approach including conflict resolution skills.

While there are no guarantees, professional facilitation is regarded as one of the best ways to keep things on track and to minimize conflict.

A small drip from a faucet can waste as much as 75 litres of water a day.

5.2.4 Executive Director and/or Other Paid Staff

Watershed organizations need paid staff to carry out the required summer field work but groups that have been able to fund an executive director position often find they can get more work accomplished.

The efforts of seasonal staff are usually focused on summer field projects and often they do not have enough time or skills for other critical operations such as watershed planning and community engagement. A full time executive director allows for a better mix of coordinated summer field projects and winter time watershed planning.

Often, the wide array of funding options is overwhelming to volunteers who can only offer a specified amount of time. When considering the benefits of an executive director, remember that they can apply for various grants or access charitable foundations which support of the



group's projects and/or core business. Other important duties may include developing materials such as newsletters, brochures and press releases and acting as the primary contact for issues and matters related to the watershed plan.

Where possible, look for local people who have the technical knowledge and people skills required to implement the plan and manage the workers, volunteers and stakeholders found in a typical watershed.

5.2.5 Community Steering Committee (s)

A community steering committee (CSC) is another way of spreading out the workload while still engaging the community in watershed planning and management. As your organization develops its goals and strategies, you may wish to create a committee from all sectors of the community to distribute the workload and take pressure off of the executive.

This concept will push the community engagement process while ensuring the limited volunteers at the executive level do not become overwhelmed or burned out. To date, community steering committees have been used successfully in many areas across the province.



5.2.6 Volunteers

Volunteers are extremely important to the success of the watershed planning and management process. They are the backbone for all watershed groups and without them, we will not have successful watershed groups. Your group should always encourage volunteerism and depending on an individual's education, experience and training, try to place the right people in the right job.

Perhaps the biggest impediment to progress with many watershed organizations is recruiting new volunteers. There are many cases where the volunteers that started a particular group are still on the executive many years later. While this arrangement may work for some organizations, for many, new blood is essential in order to grow the organization.

Successful organizations have a multitude of volunteers because they find it both challenging and rewarding. Keeping volunteers happy and involved can be a challenge, but if you recognize that time is limited for most people and actively recruit new volunteers you can keep the organization active and focused on solutions to their respective environmental problems.

However, be careful not to ask or expect too much of your volunteers and always recognize and reward their contributions.



6.0 Government Resources

6.1 Land Use Information and Mapping Services

Geographic Information System (GIS) maps and data offer a great deal of useful information for watershed management groups. GIS maps can provide an overview of land uses within a watershed and provide useful information about forest cover, agriculture crops, wetlands, slopes, etc. GIS software can be used to maintain precise records on the location of problem areas as well as track completed, ongoing and future management activities.

The Department of Environment, Energy and Forestry provides in-kind maps and GIS data to watershed organizations.

6.2 Technical Assistance and Advice:

The Watershed Management program is supported by four Watershed Coordinators and a Watershed Management Supervisor. These staff members can provide technical advice and assistance to your project and help you to access services for specific needs from other departments, divisions and agencies.

6.3 Financial Assistance

6.3.1 Watershed Management Fund

The Watershed Management Fund (WMF) provides financial support and technical advice to community-based organizations involved in watershed management and planning. However, in order to receive funding, organizations should adopt a holistic approach to watershed management.

Groups involved in watershed planning and management and working to protect and enhance wildlife habitat for waterfowl, upland game, etc., are also eligible for funding support under the WMF program. These groups may include:

- Community watershed organizations
- Other non-government organizations
- Municipalities
- Individuals, in partnership with a watershed organization
- Educational and research institutions

Projects eligible for assistance under the Watershed Management Fund include:

- Watershed management and planning initiatives
 - Watershed organizational and capacity building
 - Watershed management plan preparation
- Specific measures that address non-point source pollution
 - Erosion and sedimentation control
 - Agricultural runoff control (*Farm chemicals, nutrients, etc.*)
- Wildlife habitat enhancement initiatives
 - Upland, wetland, riparian and stream habitat enhancement



- Initiatives that support biodiversity and ecological approaches
- Initiatives that promote watershed or habitat education and awareness
- Watershed management oriented research

You only have to complete the Watershed Management Application Form in order to also apply for the Watershed Management Fund and the labor funds of the PEI Employment Development Agency (EDA). The Watershed Management Application Form includes guidelines to help your organizations complete the application and planning processes.

Priority consideration will be given to groups who propose to carry out activities in support of watershed planning and management. These activities might include adding to watershed group capacity, facilitation and strategic planning, or watershed management plan preparation.

While there is no funding limit, requests must represent a reasonable and accurate estimate of the funding required to carry out the proposed work. The level of support will depend on an assessment of all applications and the resources available. Equal distribution of funds to all areas of the province, as well as labor market issues, will also be considered.

The application deadline is midwinter for the calendar year in which funding assistance is requested. Applications may be typed or handwritten but must be submitted on the official application form and only one application will be accepted per organization. Applications must be completed in full and clearly identify the objectives of the proposal, actions and expected results.

Approved applications will be supported by a contract signed in duplicate with the sponsoring organization. Future consideration and funding will depend upon the fulfilment of the contract by the sponsoring organization. For more information on the Watershed Management Fund, or to obtain an application form* go to: www.gov.pe.ca/go/WMgrants



6.3.2 Greening Spaces Program

The Greening Spaces Program (GSP) invites communities, schools and volunteer interest groups to submit proposals for tree planting projects that:

- diversify properties
- buffer prevailing winds
- provide shade
- reduce noise
- protect lands along streams and rivers
- control soil erosion
- create outdoor learning areas (such as arboreta or tree and shrub nurseries) and/or provide habitat for wildlife.



GSP provides quality native tree and shrub seedlings, educational materials, technical advice and financial support (up to \$500 per project). Communities, schools and volunteer interest groups select the planting site, prepare a planting plan and provide the labor. Proposals are evaluated on their intent and feasibility.

Project Site Possibilities include:

- School grounds: any area of school property including the yard, parking areas, play grounds and sports fields. Trees would be planted to enhance the green qualities of the school property, create learning places, or shelter the school from winter winds or other land uses
- Streambanks: an area extending out 10 meters or more from the water's edge and which may already have grasses and some live trees and shrubs
- Hedgerows: a narrow belt of vegetation, dominated by a variety of shrubs and occasional trees, separating one area of land (usually farm fields) from another. Hedgerows stabilize soils, prevent wind erosion, accumulate and distribute snow loads and can serve as travel corridors for wildlife seeking to move from one area to another
- Wind buffer/ shelter belts: a narrow belt of vegetation, dominated by a variety of shrubs and occasional trees, which is designed to reduce heating requirements by sheltering a building or school from winter winds
- Parks, Recreation and other community lands: lands which are publicly owned, accessible and not being utilized for commercial or industrial purposes
- Abandoned or marginal farm lands: lands which are no longer productive due to soil loss and exposed subsoil, poor drainage, or high sloped and therefore, at risk for erosion. Often farming will have ceased on these areas, so grasses and some small trees may have begun to reclaim the area.

For more information on the Greening Spaces program, or to obtain an application form* go to: www.gov.pe.ca/go/WMgrants

**Note: When you apply to the GSP, the funding agency often requires a Letter of Support from other groups which support the aims and goals of your group or from other possible funding sources.*



6.3.3 Environmental Futures Program

The Environmental Futures Program is a summer program that trains high school and university students to do environmental enhancement work. Crews are located throughout the province and watershed organizations can apply to have these work teams provide labor for their environmental projects. The deadline for applications is June 15.

Projects that provide environmental benefits to the community and offer a good education and work experience to youth are eligible for funding. Examples include:

- enhancement of fish and wildlife habitat
- soil erosion control
- protecting and enhancing natural areas
- solid waste management (parks, beach or river clean up)
- environmental awareness (water management, protecting aquatic habitat) and
- educational activities

For more information on the Environmental Futures Program, or to obtain an application form* go to: www.gov.pe.ca/go/WMgrants



7.0 Other Resources

7.1 Financial Assistance

In addition to the programs and services listed above, there are several other funding agencies and avenues which can help you to realize your watershed goals. For a list of potential funding partners see Appendix 6.

7.2 In-kind Resources and Assistance

In-kind assistance for project materials and equipment loans or rentals may be available from various federal and provincial government departments. Requests for in-kind assistance should be submitted in writing to the appropriate department. The request will be considered on an individual project basis.

In-kind assistance for project materials and equipment loans or rentals may be available from various federal and provincial government departments, local businesses or service organizations which share an interest in the work of your group. Requests for in-kind assistance should be submitted in writing to the appropriate person, department or businesses. The request will be considered on an individual project basis.



Several potential examples include:

Erosion control:	Bales of straw from local farmers were used to slow runoff speed.
Fish passage:	TPW provides rocks from highway construction which can be placed below a culvert in order to back up the water and improve fish passage.
GIS information or maps:	Land use maps of the watershed were produced by the PEI Department of Environment, Energy and Forestry
Audio Visual Equipment:	Local service group loaned its PA system.
Technical advice:	Land owners had forest management plans prepared by local forest consultants.
Fax/Office space.	A village in the watershed provided office space at reduced rate and allowed access to Fax machines.
Display Space:	School, village office, grocery stores, government offices, etc., provided display space for posters and meeting notices.
Equipment time:	A local farmer lent a backhoe for removal of rock to be used in the construction of in-stream structures (deflectors).

For more information contact your Watershed Management Program Coordinator.

About 25,700 litres (6,800 gallons) of water is required to grow a day's food for a family of four.



8.0 Conclusion

The Watershed Management Planning guide was developed to help you establish a successful watershed group which can address local problems in a cooperative and positive manner. Hopefully, as you begin to build your group you will refer back to this manual for ideas and strategies on how to engage local people in watershed planning and how to “craft” the watershed management plan based on their input. Given resources and support, we are confident your community-based group can and will make a real difference in your watershed.

Finally, once you have had some time and experience implementing the ideas and strategies contained in the Watershed Management Planning Guide, we would appreciate receiving your feedback and suggestions. We believe that insights you gain in the field will help us to improve and upgrade this document so that it can better meet the needs of Islanders.

For more information on watershed management assistance, programs, and other resources, contact your local Watershed Coordinator, or refer to the web addresses listed in this document.





Appendix 1

History of Watershed Planning and Management on PEI

Watershed management is defined as an initiative to enhance and protect our water quality and environmental health on a watershed basis. Watershed planning is an all-inclusive process of community decision making which involves all stakeholders who work, live and/or have an interest in the watershed. Perhaps the single most important issue facing Islanders is the protection of potable ground water supplies. PEI remains the only jurisdiction in the country solely reliant on groundwater for domestic use. Since groundwater is a significant contributor to stream-flow on PEI, particularly during low flow periods, it is recognized that management on a watershed basis is the most desirable approach if any success is to be realized.

The nature of early settlement patterns, land clearing and agricultural production have all had negative impacts on watersheds within the province. Regrettably, most environmental impacts from early settlement were not positive, particularly forest harvest or land conversion activities that diminished the abundance and quality of forested land. Today, the province has very real environmental issues that are far greater and more complicated than the loss of forest cover during the settlement years.

Watershed Planning and Management is a work in progress on Prince Edward Island. The earliest efforts of watershed planning and management on PEI were realized in 1972 when the Morell and Area Land Use Steering Committee (MALUSC) became aware of proposed cottage development along the Bangor Rd. near Indian Bridge on the Morell River. Subsequently, members of the MALUSC spent considerable time speaking to landowners about the importance of “protecting” the river from cottage development. With the backing from the majority of landowners, the MALUSC convinced the provincial government to protect the greenbelt or “conservation zone” for 198 ft. on both sides of the river for a total of 44 kilometers. Eventually, the Morell River Conservation Zone was formally designated and protected under the *Planning Act* and remains so today. Over time, the Morell and Area Land Use Steering Committee was dissolved and became the genesis for the Morell River Management Cooperative, an organization which remains active to this day.

The Souris and Area Branch of the PEI Wildlife Federation were active in the early 70s in watershed management in several watersheds in Northeastern Kings County PEI. The organization was guided by a belief “*that the renewable natural resources of PEI are economic, social, recreational and aesthetic assets which must be restored, managed and conserved for posterity*” (The Beacon, Issue 45, May 9 to 22, 1994). The Souris and Area Branch of the PEI Wildlife Federation were early pioneers of “stream enhancement” on PEI.

With community enthusiasm and success, it soon became apparent that watershed management at the local level was the best vehicle for conserving and restoring degraded watersheds. More importantly, community led projects were more likely to succeed than a government program and with a little bit of start up money, community-based watershed groups could lever additional dollars and significant volunteer hours. Another beneficial aspect of community led watershed projects was that of job creation



and economic impact, particularly in areas of chronic unemployment far removed from the cities of Charlottetown and Summerside.

In March 1987, the Government unveiled *A Conservation Strategy For Prince Edward Island*. As part of this strategy, the Island Conservation Assistance Program (ICAP) was rolled out to assist not-for profit community watershed groups with financial assistance, equipment and technical support for stream restoration projects. A number of worthwhile projects were carried out across the province and soon, more communities were wanting to carry out projects. Before long, the demand far exceeded the supply of money for these early conservation efforts.

Sensing the grassroots groundswell and the realization of environmental improvements, the province entered into a Cooperation Agreement on Sustainable Economic Development with the federal government and a component of that agreement was the Canada/PEI Watershed Improvement/Recreational Fisheries Development Program (WIRFDP). This program ran from 1992 to 1996 and involved the hiring of a program coordinator, a program planner and six seasonally employed regional coordinators to provide technical assistance to non-governmental organizations involved in watershed improvement and/or recreational fishery projects. At the end of the Canada/PEI Cooperation Agreement, the province remained committed to community watershed projects and continued to support these projects through a new provincial program known as the Wildlife Habitat Improvement Program (WHIP) which ran from 1996 to 2002. During this same time frame, Island conservation groups successfully lobbied for a Wildlife Conservation Fund, a once/year fee attached to the sale of all angling and hunting licences sold in the Province. Monies realized through the conservation fund were then put back into environmental projects.

In 2002, the province reassessed the program and made modifications to focus more on water quality on a watershed basis. Community watershed projects were having some success, however, continued problems with land use, groundwater contamination, soil erosion, anoxic events and pesticide related fish kills which garnered national media headlines, it was becoming obvious a more concerted approach to watershed management was needed. Watershed groups were also requesting changes administratively, as well as seeking assistance for watershed planning, an activity that is best done during winter months when people typically have more free time. The province reorganized its Dept. of Environment and established a Watershed Management Section. This section was established to, among other things, provide financial support from the Watershed Management Fund (WMF).



Appendix 2

Time Line of PEI Watershed Management History and Highlights

- 1905 PEI Fish and Game Association (later re-named PEI Wildlife Federation) formed and was the first non-government environmental organization on PEI.
- 1970 The Souris and Area Branch of the PEI Wildlife Federation became involved in stream restoration activities in watersheds near Souris. This was the first actual “project” carried out by a non-government organization on PEI.
- 1972 The Morell and Area Land Use Steering Committee formed over concerns about a cottage development on the Morell River. This organization successfully lobbied for the first legislated conservation zone in the province. The Morell and Area Land Use Steering Committee eventually was re-named the Morell River Management Co-operative.
- 1986 The Montague Watershed Project was established as a demonstration project showing the benefits of holistic watershed management. Many techniques for fish and wildlife habitat enhancement were demonstrated and documented.
- 1987 The Province unveiled *A Conservation Strategy For Prince Edward Island*. This strategy put more emphasis on community involvement in conservation issues and watershed management through a strategy component called the Island Conservation Assistance Program (ICAP).
- 1992 The province and federal government enter into a 5-year Cooperation agreement on Sustainable Economic Development, with a major component being the Watershed Improvement/Recreational Fisheries Development Program.
- 1996 Upon the closure of the Watershed Improvement/Recreational Fisheries Development Program, the Province resurrects a similar program entitled the Wildlife Habitat Improvement Program
- 2000 The province adds the Wildlife Conservation Fund as a requirement of all hunting, fishing, or trapping licences. This is a once/year fee that goes directly to watershed and/or wildlife conservation projects.
- 2002 The province reorganizes the Environment Department and the former Wildlife Habitat Improvement Program was re-named the Watershed Management Fund with obviously special emphasis to watersheds. Simultaneously, a Watershed Management Section is established under the new Water Management Division.
- 2003 The Trout River Environmental Committee produced the Stanley/Hope Stewardship Plan following several years of watershed planning meetings in the Stanley and Hope River watershed complex. This plan is widely regarded as the most comprehensive and publicly supported watershed management plan to date.



Appendix 3

Watershed Planning: Typical Budget and Costs

Watershed Planning Activity	Low Cost Example	High Cost Example	Comments
Year 1 Research your watershed. This may include a state of the environment report.	0	\$20,000	can be done cheaply if desired or if talented volunteers have unlimited time
Communications	\$1000	\$10,000	minimum costs include advertisements
Interviews/Report	0	\$3,000	may be desirable to document memories of older residents
Meetings: hall rental and refreshments	\$500	\$3,000	appropriately sized public meeting place is important. Up to 12 per year.

Year 2 Communications	\$1000	\$10,000	minimum costs include advertisements
Meetings: hall rental and refreshments	\$500	\$3,000	appropriately sized public meeting place is important. Up to 12 per year.
Facilitation	0	\$5,000	highly recommended
Developing (Writing) Watershed Management Plan	0	\$10,000	may be written by volunteers, but having professional help would be useful.

Year 3 Communications	\$1,000	\$10,000	minimum costs include advertisements
Meetings: hall rental and refreshments	\$500	\$3,000	appropriately sized public meeting place is important. Up to 12 per year.
Print and distribute Watershed Management Plan (1,000 copies)	\$10,000	\$30,000	depends on document size and number of color images. Each watershed plan will be unique. Nice to have extra copies available.
Three-year total cost	\$14,500	\$107,000	costs can vary considerably



Appendix 4

Watershed Planning Process Timeline

It must be stated that a watershed planning process will usually take between two -four years to complete and time lines will vary across the Island depending on a number of factors. It should be generally understood that in order to be successful, a watershed group will have carried out several hands on river restoration or education projects over many years before attempting holistic watershed planning. Watershed Planning is not recommended for new groups wanting to improve the environment. If you are starting out, take the time to get to know your watershed, it's residents and major issues. This time will have been well spent once your organization has the capacity and support to undertake watershed planning.

1. Gauge community support and interest in project and seek active participation

(6 months to 1.5 years)

- inform watershed stakeholders about need/desire for watershed planning
- organize community steering committee
- solicit feedback on problems, issues and concerns through multiple meetings
- develop scope of work — goals, objectives, time frame for plan to cover etc.
- Strategic planning
- communicate

2. Collect and analyze watershed resource information

(6 months to 1 year)

- assemble land use information including maps
- collect any/all reports containing valuable watershed specific information
- determine status of resources
- determine areas requiring work or deficiencies
- communicate

3. Prepare the Draft Watershed Management Plan

(6 months to 1 year)

- Plan will include as much background information as possible on the watershed and about the sponsoring organization including the formation of the Community Steering Committee. Other core areas of the document include items gleaned through strategic community planning sessions including the Vision Statement, Guiding Principles, Issue/Concerns, Goals and Strategies to meet the identified Goals. Consider present and future conditions of the watershed. Ultimately, the plan should be reflective of community input up to this period. Plan should also include measurement indicators to allow for future determinations to be made if the Watershed Plan has been successful.
- Communicate Goals of the plan and ensure all stakeholders have opportunities to review the plan and provide critical review and comment. A 90-day window for hosting meetings and information sessions and otherwise getting feedback would be realistic.



- Seek to get endorsement from watershed stakeholders

4. Prepare the final Watershed Management Plan

(6 months to 1 year)

- Unveil the a final plan to watershed community through meetings
- Seek to involve all watershed stakeholders in the delivery of the plan
- Monitor and adjust the Watershed Plan as required over time.
- Communicate



Appendix 5

Ten Recommended Steps to a Healthier Watershed

Appendix 6 contains a recommended course of action for the process of implementing a positive change in the health of a watershed. This course of action is based on a review of the experiences of several successful groups on PEI and from agencies throughout North America who have adopted a watershed based approach. With the exception of the first three steps, they do not have to be followed in order to succeed nor does one step have to be completed prior to beginning another. In general, the following steps will be common among successful watershed groups.

Step 1: Get the Right Participation

Successful watershed improvement projects are community driven. Having the right participation means that all important stakeholder perspectives are considered and that the process of determining action is open and inclusive. This should result in a course of action that all stakeholders can buy into. Buy-in will avoid the resistance and lack of commitment for change which often results from unilateral decision making.

Step 2: Develop a Mission Statement and Guiding Principles

Successful projects are those the community supports. In order to get people involved it is necessary for people to know what the group stands for and how to achieve. This can be done by adopting a vision or mission statement. The Mission Statement articulates in one or two statements what an organization hopes to accomplish. Guiding Principles are the rules which govern the organisation. They focus the group on the way their vision will be accomplished by stating broadly how the work is to be carried out.

Step 3: Develop an Organizational Structure

With broad based community support and participation, an organizational structure will be required to insure that the group's efforts are focussed and effective. Organizational structure helps to ensure that the right people are doing the right jobs in an effective and efficient manner. A formalized organizational structure also allows the group to apply for resources that might be unavailable to a less organised group.

Step 4: Get to Know the Watershed

While you may have a good idea of the issues and concerns facing the watershed, you may not have all of the information necessary to proceed with a planning exercise. Try to identify information gaps and sources that will help to clearly identify local issues and concerns and then proceed with the development of solutions that are acceptable to all stakeholders.

Step 5: Identify Issues and Concerns

As people become aware of and educated about the watershed, the issues and concerns of the various stakeholders will become apparent. By defining the issues and concerns that are relevant, you can plan a course of action that will be workable and achievable.



Step 6: Develop Goals to Deal With Issues

Establishing goals will provide direction on issues and concerns. These goals should contain achievable objectives that focus on specific solutions or courses of action. Goals, both long term and short term, should also be measurable so that progress and successes can be identified and promoted.

Long term goals (i.e. 5 year goals, 10 year goals etc.) form a framework which allows the organization to determine where and how to focus its efforts and ensure that time, energy and resources are not wasted. Short term goals are bits of the long term goals that are achievable in a shorter term (i.e. 1 or 2 years). They need to be updated and adjusted frequently so that the group remains dynamic in effort.

Step 7: Develop an Action or Work Plan

The action plan determines how the goals can be carried out. The action plan is specific and determines who and how the work will be carried out. The action plan also determines what resources will be required to do the work and when they will be required. This allows the group to do fiscal planning and allows funding partners to see what level of commitment is needed, for how long, etc.

Step 8: Write it All Down — The Watershed Management Plan

An integrated watershed planning document or Watershed Management Plan encompasses the information included above. Its purpose is to guide the group's efforts by documenting needs and issues, agreed upon goals and objectives and the action plan that directs the work. It should be a dynamic document that can be updated regularly as progress is made or when new or additional actions are required. It should also identify the work remaining to be done.

Step 9: Implement the Action Plan

In virtually every case, the watershed group and its stakeholders are anxious to get working. Implementation means that the direction and resources which will ultimately lead to change are in place.

Step 10: Evaluate - Monitor - Plan Adjustment

Once the plan is implemented there should be a way to monitor progress. The community will need to know what work has been done toward achieving goals and what measurable progress has been achieved. As time progresses, the planning document itself will have to be updated and adjusted to reflect changes and progress and allow the work to continue.



Appendix 6

Other and Web-based Resources

Application forms for the **Watershed Management Fund** are available by contacting the Department of Environment, Energy and Forestry at 902 368 5028 or from the Department's web site at www.gov.pe.ca/go/wmf

Application forms for the **Greening Spaces Program** are available from the Forest, Fish and Wildlife Division by calling 902 368 4700 or online at www.gov.pe.ca/go/GSP

Application forms for the **Environmental Futures Program** are available at your nearest Access PEI site or online at www.gov.pe.ca/go/EnvironmentFutures

For more information on the **Forest Enhancement Program**, call (902) 368 4700 or visit www.gov.pe.ca/go/fep

Wildlife Conservation Fund

The Prince Edward Island Wildlife Conservation Fund was initially created in 1998 to provide funding for the protection and enhancement of wildlife and wildlife habitats. Money for the fund comes from a contribution made once per year by each licensed angler, hunter and trapper. In 2006, the PEI Department of Environment, Energy and Forestry officially transferred administration of the Fund to the Wildlife Conservation Fund Committee. The Board is currently composed of the following:

- 3 representatives from the hunting community
- 3 representatives from the angling community
- 1 representative from the trapping community
- 1 representative from community watershed groups
- 1 representative for non-consumptive users
- 1 representative from the PEI Department of Environment, Energy and Forestry

Your application will be evaluated by the Committee based on the following criteria:

- The proven track record of the proponent
- The presence of matching funds (in-kind and cash) in the budget
- The potential benefits provided by the project

Please note:

- The Committee may contact outside expertise as needed when evaluating proposals.
- For research projects, please attach hypothesis, methodology and a description of the practical application of the research results.
- Applications requesting WCF support for full salary or salary top-up will be evaluated on a project-by-project basis.

For more information visit: <http://www.gov.pe.ca/go/wcf>



Other on-line resources:

Funding Source(s)	Available Assistance	Information
Human Resources and Skills Development Canada (HRSDC)	labor	Summer Career Placements assists students to prepare for entry into the labour market. SCP provides career-related work experience through the provision of wage subsidies to public, private and not-for-profit employers to create summer employment for students aged 15 to 30 years.
Shell Environmental Fund (SEF)	non-labor expenses	The Shell Environmental Fund (SEF) provides financial support for grass-roots, action-oriented projects that improve and protect the Canadian environment. You can receive a grant only once for any single project. SEF provides up to \$5,000 per project.
Environment Canada EcoAction	labor and other project expenses	EcoAction Community Funding Program provides financial support for projects that have measurable, positive impacts on the environment. Funding can be requested for projects that have an action focus, a community capacity building focus, or a combination of both.
Tree Canada Foundation (TCF)	tree planting	Tree Canada Foundation works with groups to promote the educational value of tree planting and maintenance, tree inventory projects, as well as the planning and execution of, "the simple act of planting a tree".
Canadian Environmental Grantmakers Association	varies	CEGN is primarily an information and support organization for grantmakers. While it does not make grants itself, it does try to increase networking and collaboration between environmental grantmakers and grantseekers
Environmental Grantmakers Association	varies	EGA seeks to help member organizations become more effective environmental grantmakers through information sharing, collaboration and networking.

For a more complete list, go to <http://www.gov.pe.ca/go/WMgrants>



Appendix 7

Glossary of Common Watershed Management Terms

Anoxia/hypoxia:

Depleted oxygen levels, often caused by the decay of aquatic plants, which can kill fish, invertebrates and other aquatic organisms.

Biodiversity:

In the most simple of terms, biodiversity refers to all plant and animal life and the ecological infrastructure that supports it.

Buffer zone:

The ecologically sensitive area bordering both sides of a stream, river or pond.

Clearcut:

An area of forest, one hectare or greater in size, where all or most of the trees have been removed, but where the site will be returned to forest cover.

Estuary:

A semi-enclosed body of water, connected to the ocean, where salt water is measurably diluted with fresh water from the land.

Eutrophic/eutrophication:

The gradual increase and enrichment of an ecosystem by nutrients such as nitrogen and phosphorus.

Forest Cover Type:

The tree species forming a majority of the composition across a given area.

Geographic Information System (GIS):

A computer information system that can input, store, manipulate, analyze and display geographically referenced (spatial) data to support land use decision making processes.

Global Positioning System (GPS):

A system of computers, satellites and receivers that calculate, coordinate and determine the factors such as position, altitude, boundaries and other mapping features.

Impoundment:
Any wetland or body of water that is created by the formation of an earthen or concrete dyke around the perimeter. This includes man-made ponds.

Land Conversion:

An area of forest where all of the trees have been removed and where the site will be permanently converted to another use.



Non-Point Source Pollution:

Pollution which arises from many sources (car exhaust, lawn chemicals,) rather than a centralized source (city sewage)

Nutrient Enrichment:

A process which increases nutrient inputs into a water body or aquatic system causing excessive production of organic matter in the aquatic system.

Stewardship:

The act of caring for the land through responsible land ownership and management.

Riparian Zone:

The ecologically sensitive, vegetated area between the edge of a stream or pond and the upland area.

Watershed:

The area of land where runoff and groundwater flows into a specified body of water such as a river, lake, sea.

Watershed Management:

Managing forests, fields and human activities to ensure the ongoing health and supply of the water resource and the people who depend upon it.

Wetland:

A lowland area, such as a marsh or swamp that is saturated with moisture, especially when used as a natural habitat for wildlife.



Notes