Chapter 1

Prince Edward Island, Canada

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Prince Edward Island (PEI), Canada's smallest and most densely populated province, is an arc-shaped land mass of 2,185 square miles nestled on the eastern seaboard in the Gulf of Saint Lawrence. The island's heritage landscape is made up of a rich layering of natural and cultural forms in distinctive patterns and arrangements. The natural landform pattern of gentle hills carved into the sandstone bedrock by glacial streams has evolved into a cultural landscape of rolling fields framed by parallel hedgerows, with farmsteads settled in wooded groves. Coastal roads dip into forested hollows and open up to wide ocean views on the hills, while traversing the deeply indented coastline of bays and inlets across a patchwork of hedgerow-lined fields and rivers running to the sea.

This rich natural mosaic, with its well-developed fit between the visual and the functional, is largely an artefact of the British colonial settlement patterns of the late eighteenth and early nineteenth centuries (Clark 1959: 214–223).[1] An interwoven layer of coastal fishing harbours and riverside settlements originated under the influence of the earlier inhabitants, including the aboriginals and the French settlers, the Acadians. With hard work and ingenuity, the Acadians adapted the seventeenth-century French style of dyke construction to reclaim coastal salt marshes for agriculture; this extended field pattern was often maintained by later settlers. The landscape features of the island's Malpeque Bay area are rich in Mi'kmaq symbolic imagery, based on 10,000 years of enduring use for hunting, fishing, gathering and spirituality. The PEI landscape and culture have been both idealized and popularized around the world through the vast number of images (Epperly 2007, 174–176)[2] in the writings of Lucy Maud Montgomery (1908) in her series of books based on a well-loved fictional character, the red-haired orphan Anne of Green Gables. The island is also well known as the site of the Charlottetown meetings of 1864 that led to the founding of the Canadian Confederation.

Today, in Prince Edward Island as in many other endangered rural heritage landscapes of the early twenty-first century, the character of the pas-

toral landscape is in rapid transition. On this island of 140,000 year-round inhabitants, where the locals relish their 'quality of life' and tourism is the second largest industry after agriculture, the impact of change could be more far-reaching than many residents drawn into the large-scale land clearing of modern mega-farming and land development are currently able or willing to visualize. The idyllic island vision of distinctiveness, a separate reality characterized by a slower pace of life and authentically different cultural patterns, is very much under pressure. There is a clear risk that the sense of romance and adventure associated with both visiting and living on the island may be gradually and inevitably lost. Island studies scholar Baum (1997: 22–23) has discussed the 'fascination' of islands, referring also to Butler (1993: 71) as providing one of the few academic references to the appeal of islands. While Butler describes their appeal to tourists, the same motivations could easily be applied to island residents, who are often known to pride themselves on their individuality and vigorous sense of independence: 'Their appeal may relate to the very feeling of separateness and difference, caused in part by their being physically separate, and perhaps therefore different from adjoining mainlands. Where such physical separateness is accompanied by political separateness, the appeal can be expected to increase, and given people's desires for the different while in pursuit of leisure, different climates, physical environments and culture can all be expected to further the attractiveness of islands as tourism destinations' (Butler 1993: 71).

From a landscape conservation point of view, the issue has become one of protecting and enhancing the authentic historic patterns while successfully managing new approaches to land development. The question to address throughout the process must be 'What attracts people here in the first place?' And the answers must include strategic planning to sustain the often difficult-to-define distinctiveness that makes the benefits of island living and tourism outweigh the drawbacks of separateness and isolation. By definition, authentic answers must arise and be accepted from within the community. The same qualities of proud individuality that characterize the islanders' approach to their own land must be appealed to and harnessed as a means of protecting the character and individuality of the community landscape as a whole. But how does a new planning process deal with the selective blindness of familiarity? How can a landowner be expected to automatically see beyond the everyday economic pressures of a farming and tourism business? A key to the answer lies within our universal willingness and ability to perceive an island as a coherent distinct 'picture'. In his collection of PEI anecdotes *Them Times,* Weale quotes Governor-General of Canada Lord Tweedsmuir speaking in Charlottetown in 1939: 'What is it that gives an island its special charm…? I think the main reason is that an

island has clear physical limits, and the mind is able to grasp it and make a picture of it as a whole' (Weale 1992: 93).

This chapter argues that a successful planning process can be put into place by educating and developing the residents' innate capacity for visualizing their landscapes. The acquisition of new skills in 'reading' the visual cues of their own stories and memories in the landscape will deepen the community's awareness of how the images and patterns have been woven together over the generations. This recognition would empower them, in turn, to choose and conserve the visual narratives that best express the spirit and 'picture' of the PEI culture they wish to pass on to the next generation. 'So the land must first exist as a concept in the mind [in order to be perceived]?' muses a character in *Songlines* (1987: 14), Bruce Chatwin's literary exploration of the Australian landscape. In a similar process, visual planning challenges landowners to develop their own ideal land concepts, to perceive the consequences of impending change and to work together in balancing different points of view.

A landscape conservation goal based on intangible values, a seeming contradiction of conventional profit economics, may at first glance be considered naïve. There is a lot of money at stake. The 'pretty picture' is judged as an impractical luxury if a hardworking farmer is going bankrupt, or retiring without an heir to take over the farm. It is common knowledge of late that, while an acre of good farmland in PEI Queen's County is typically selling at some Can$1,500, the same acre sold for development in the most scenic zones could bring as much as Can$60,000: forty times as much. This can happen because there are no clear planning laws in the province. PEI residents are very protective of their 'right' to do what they want with their land, and will look very suspiciously at any initiatives that may curtail that right. While they may collectively treasure and value viewscapes, they will react differently if their own private plans are thwarted.

However, an approach of appealing to and drawing out residents' attachment to their personal stories, memories and meaning of the spirit of place throughout the planning process, rather than simply imposing new development regulations, is much more likely to encourage their sense of land stewardship and responsibility. The inhabitants' sense of 'islandness', or the community feeling of living on an island, can be a distinct advantage in encouraging the conservation of the landscape. On a small island, the 'court of public opinion' often reigns supreme, and media coverage of any issue can make more of a difference than in larger, less distinct settings. In this context, there is potential for significant progress, if landscape conservation efforts and solutions are promoted in the local, regional and national media, and landowners are duly rewarded for their efforts with recognition and acclaim. Both academic research and simple observation of human na-

ture indicate that the key to building support for landscape conservation does indeed rest in recognizing stakeholders' intangible as well as tangible values, and validating their connection with the land. Australian geographers Brown and Raymond (2006: 22) observed in their landscape values research that the more knowledge survey respondents expressed of a region, the more significantly they identified with the place. They also found that the values most strongly linked with respondents' attachment to place are closely associated with their perception of the landscape's spiritual and symbolic values. In conclusion, they recommend that planning should acknowledge 'the spiritual bonds that people form with a landscape, which are rooted in place, and that symbol management may be as important as land management' (Brown and Raymond 2006: 27).

Creating an innovative planning framework that is personally meaningful to island landowners may be a more involved process, but by protecting the island's distinctiveness, and its continuing appeal to tourists and residents alike, it will ultimately lead to longer-term societal profits than will the sale of scenic land for random development. At the local 'grass-roots' level, the knowledge of the local land user and the landscape professional can be effectively combined to guide sustainable development. Through a process of assembling and analysing all the visual tools, narrative imagery and landscape representations possible for a particular locale, the community learns to look at itself at different scales, in different time periods and from varying angles of point of view. The finite, densely populated geography of the island landscape, with its inevitably contested scarce resources of land, vistas and waterfront, can be used to clear advantage in such a community-centred, imagery-based planning process. In Prince Edward Island, arguably the province most visibly altered by human impact, the inhabitants treasure the landscape and yet resist the perceived imposition of land use controls. With a new emphasis on landscape visualization, the two-dimensional restrictive approach of conventional land use planning can jump from the page to become a multi-dimensional experience of community self-discovery.

The kinds of visual tools that are helpful in this process can be assembled from both private and public collections as well as government sources. In Prince Edward Island, the provincial archives and Meacham's historical atlas of 1880 are a rich source of illustrations, maps, plans and photographs. The provincial departments of forestry and agriculture have air photo coverage of PEI for the years 1935, 1958, 1974, 1990, 1994, 2000 and 2010, and an evolving Geographic Information Systems (GIS) visual database of forestation and settlement patterns over the years. Local professional and amateur photographers have shot aerial oblique panoramas as well as more conventional 'view from the road' scenic photos. On-site interviews with

local inhabitants invariably generate family photographs and memories of individual land holdings. Aboriginal tradition can contribute 'creation stories' that identify sacred places of power where spirit beings have contoured the landscape. All of the above visual tools, once organized and presented systematically and effectively in visualization techniques, can serve to draw the community participants into a necessary first stage of exploring in depth the evolution of their natural and cultural landscape patterns over time.

Application of Visualization Techniques

The effective application of visualization techniques is essential. The simplest and most accessible method is to juxtapose or overlay actual images of the same location in different time periods, which can be called 'historical overlay analysis'. Air photos and view from the road photos or drawings are ideal for this comparison. Aboriginal myth analysis is a powerful technique for assigning symbolic values and images to specific landscape features. Landscape visualization can also borrow from the aboriginal tradition to communicate the intangible spirit, memory and myth of place.

On a more factual level, GIS data analysis of overlays of GIS data representation over time of forest cover patterns, soil classes for agriculture, and settlement and drainage patterns can also yield startlingly visual observations about the progression and suitability of land subdivision practices. The system of overlaying transparencies of different natural attributes of the same piece of land as a design tool was pioneered by the American landscape architect McHarg in his seminal work *Design with Nature* (McHarg 1969).[3] 'Viewscape analysis' is a worthwhile but more difficult exercise that attempts to define and manage the scene unfolding as the viewer moves through the landscape. Controls are recommended in order to protect and frame the cone of vision from key vantage points. In 'landscape values mapping', developed by Brown (2005), survey participants are asked to place sticker dots of varying ratings on a site map to indicate both the location and importance of landscape values ranging from 'aesthetic' to 'therapeutic'.

'Landscape impact analysis' (LIA) is a technique developed by Emmelin (1982) for analysing the spatial impacts of land use policy in Northern Europe. One of the most influential applications of this approach in North America is a design manual for conservation and development in the Connecticut River Valley (Yaro et al. 1988). The method consists of producing a comparative sequence of at least three perspective drawings or computer simulations of the landscape scene in question. The first one shows the existing conditions, the present picture. A preliminary drawing may illustrate

the historical view, if it differs significantly from the present. The second illustrates the probable future outcome and consequences of current development trends. Additional illustrations are used to test new scenarios by showing the potential outcomes of various interventions. Emmelin developed LIA as a means of moving beyond the generalized descriptions of typical visual impact analysis of land use policy: 'A transformation of knowledge from a [policy] system to a spatial or "arena" perspective is needed. We need to develop a method which disaggregates policy into local-level effects and analyses and describes these in concrete and spatial terms' (Emmelin 1996: 19).

Prince Edward Island is an ideal laboratory for such an exercise in landscape-level visualization and planning, and not only because of its 'imageable' size as a small island. Through its largely intact eighteenth- and nineteenth-century patterns of hedgerows and land divisions, the perceptive or trained viewer can still see the past and is able to trace transitions in the landscape picture.

For example, the Park Corner area lot plan illustrated in the Meacham's atlas of 1880 is remarkably similar to the land division patterns visible one hundred years later in the 1990 air photo. However, comparing the 1935 air photos of the same area to the 1990s, one can see how there is now much less field division than in the 1930s, within the same property lines. There has been a significant reduction in the variety of field crops and usage, and a marked increase in typical field size since the historic pattern first illustrated in the 1880 Meacham's atlas (see Figures 1.1, 1.2 and 1.3).

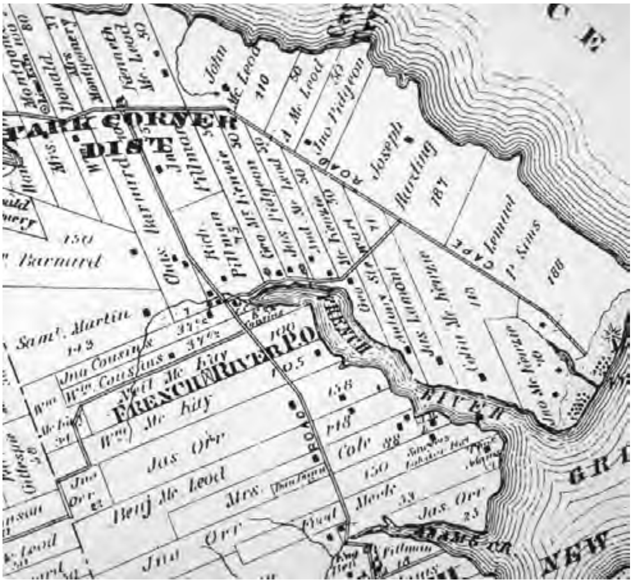

Figure 1.1 Park Corner Area Lot, 1880

Source: Meacham's atlas of 1880. Public domain.

Figure 1.2 Park Corner Area Lot, 1935

Source: Air photo 1935, from the collection of the National Air Photo Library. Natural Resources Canada. Public domain.

Figure 1.3 Park Corner Area Lot, 1990

Source: Air photo 1990, Department of Environment, Energy and Forestry, Province of Prince Edward Island.

Air photos and aerial obliques from the twentieth century show farmsteads at the climax of long lanes, protected by groves of trees on the windward side, closely matching landscape drawings from the Meacham's atlas. A well-adjusted ecological fit between the form and function of the farm cluster and its woodlot setting contributes to the ongoing self-sufficiency of the ensemble (see Figure 1.4). By the late twentieth century, many lone farmhouses sitting in expanded fields have lost this meaningful landscape context (see Figure 1.5).

Figure 1.4 1990s Vista
Source: Barrett and MacKay Professional Photographers, P.E.I.

Figure 1.5 Lone Farmhouse, 1990s
Source: Barrett and MacKay Professional Photographers, P.E.I.

There has historically been a distinctive division, or transition, between farmscape and townscape in the rural landscape. Farms are set well back from the road on long lanes, and town and village buildings cluster next to the road to provide accessible services. In this way, the pattern of development naturally widens and narrows in the view from the road, and there is a clear delineation between the experience of open countryside and the welcoming embrace of a friendly town. However, since the late twentieth century a marked disruption in this pattern has begun. It is now difficult to find a country road without a suburban bungalow located right next to the road for easy access. While enjoying the view themselves, the owners of these houses dramatically alter its basic composition with an out-of-context prominence.

Even in heritage farm landscapes, new barns are being erected independently of planted cluster patterns. Functional but unattractive industrial plants pop up in the rural landscape without context and appropriate setting. Cottagers desiring to be alone with the view can become a visual barrier for everyone else.

New farming techniques have begun to create dramatic changes in hedgerow and woodlot patterns. Island producers face enormous challenges in choosing to maintain locally supportive landscape systems rather than adopt those imposed by larger outside trends in monoculture and forestry.

A strategic planning initiative is clearly necessary in order to conserve, reclaim and strengthen the authentic character of the island's landscape patterns (Lips 1997, 2009).[4] The next section of the chapter will illustrate how the community can put the proposed landscape visualization process into practice by using the tools and techniques described, in four case study areas: hedgerows, farm clusters, cottage clusters and viewscapes. The aim in each case is to rediscover historical patterns, analyse the effects of modern development, test new scenarios and guide future policy direction. Finally, a conclusion reviews the contribution of visual landscape planning to the overall planning process.

Hedgerows

Historical Pattern

One unique feature of the PEI landscape is the system of hedgerows. This pattern of strong parallel lines is not only visually but historically meaningful, as the direct outcome of the original survey of the island by Captain Samuel Holland in 1764, the first land survey carried out in British North America (Bolger 1973: 34–35). The original 67 lots were laid out to all have water access, evolving with subdivision over time into the visible pattern recorded in 1880 of long narrow forms perpendicular to the shore and main roads. As the fields were cleared, trees were left at the edges to form natural fence lines and windbreaks. The result was such a good fit between form and function, socially, economically and ecologically, that the pattern has persisted, largely unchallenged, until the current generation. Aside from visual beauty, the naturally regenerating hedgerows have provided interconnecting green pathways for wildlife and shelter to the enclosed fields, decreasing wind erosion and windburn. Birds flourish in the mixed tree growth. The parallel rows show off the rolling PEI landscape in a unique fashion. On a bare hill, or one that is completely wooded, the curvature is barely noticeable. With the addition of the hedgerow pattern, there is perceptible depth and perspective in the picture.

Unfortunately, where they are parallel to the slope, the windbreaks do not help much against water erosion. But severe field erosion has become a major problem only with the advent of large monoculture fields. The historic pattern illustrated in the 1880 Meacham's atlas reflects the crop rotation and mixed farming of the times, with cross-lot fencing (Allen 1880:

137). Up to the mid twentieth century, air photos continue to show division of the long fields by the cross-planting of hedgerows and mixed fields.

Modern Development

By 1990 the new pattern of parallel plowing along the slope of larger monoculture fields by larger machines had begun to cut the roots and decimate the hedgerows, while increasing field erosion. Some hedgerow plantings were weakened or killed by the introduction of herbicides and high-nitrogen fertilizers in the postwar period (Stewart 1999: 2). Many rows have been trimmed in width, thinned or eliminated altogether. GIS data can also be used to illustrate the prevalence of a new pattern of woodlot clear-cutting for forestry, new blueberry production and land development. The scale of destruction by large machinery also disrespects the existing patterns by eliminating dividing lines and connected wildlife corridors in the landscape. In response to the growing threats of field erosion, new practices in strip cropping, or contour farming, have become more popular. While effective for erosion control, the implementation of this method often causes more destruction as the new field strips follow the contours of the land, in longer turn-saving lines, cutting across hedgerows. However, on scenic coastal land, the uncontrolled subdivision of fields into cottage lots has begun its own assault on the landscape pattern. A multitude of small lots are laid out 'cookie cutter' style with an eye to maximum profit and little consideration of existing natural features. The result is an expanding pattern of little boxes dotting coastline fields devoid of windbreaks and woodlots.

Landscape Scenarios

Landscape impact analysis can be applied to help local and new stakeholders visualize the possible effects of integrating hedgerow conservation and restoration with cottage development.

On Branders Pond, along the Malpeque Peninsula, the existing view still maintains a largely heritage feel, with a nestled farm in the foreground. However, a few cottages are making an appearance on the background hillside, clearly visible due to the lack of vegetation in the subdivision (Figure 1.6).

As more and more of the cottages are built within the existing lot pattern, the background view will become increasingly chaotic and eventually dominate the heritage feel of the foreground farm (Figure 1.7).

The reintroduction of hedgerows along the original lot lines leading to the water would serve to camouflage the cottage development and inte-

Figure 1.6 Branders Pond, 1997
Source: Karen E. Lips.

Figure 1.7 Branders Pond, if Current Trend Persists
Source: Karen E. Lips and Ole Hammarlund.

Figure 1.8 Branders Pond: Testing New Scenarios
Source: Karen E. Lips and Ole Hammarlund.

grate it into the landscape, without significantly interrupting water views (Figure 1.8).

Policy Directions

A series of policy recommendations follow from these critical observations. First, the reintroduction of hedgerows could be successfully visually applied as a new pattern to the existing cottage development all along the similar coastline of the Malpeque Peninsula. Due to the gradual rise in elevation from the shoreline, longitudinal hedgerows will not significantly impede water views. Second, policies in provincial forestry land mapping could promote identification and conservation of existing hedgerows. For example, there could be a commitment to the more time-consuming representation of hedgerows by their width and component species, rather than by the simple line used between 1980 and 2000. Recorded hedgerows could be designated as heritage features, and protected and enhanced with the use of tax credits and land development covenants (Round Table on Resource Land Use and Stewardship 1997: 128–129).[5] Third, new contour farming policies could safeguard hedgerows as necessary wooded 'frames' around new strip cropping patterns.Finally, in special scenic impact areas, types of farming that can more easily conserve heritage landscape and

hedgerow patterns – for example, dairy farms and smaller organic farms – could be promoted and protected.

Farm Clusters

Historical Pattern

While displaying a tremendous variety, the scenic heritage farmsteads of Prince Edward Island share some important common features. Most importantly, the farm buildings are laid out in a cluster, or collection of house and outbuildings, often around a central courtyard or farmyard. The farm cluster is typically characterized by one or more unifying architectural elements: the use of wooden shingles on roofs and walls, a steep 12/12 pitch on all rooflines, and the application of a contrasting paint colour such as red to the building trim. The historic farmstead is well landscaped. Many of the surrounding trees and woodlots are over a century old and now provide a majestic protective setting for even the most modest buildings. Access to the farm is typically down a long narrow red dirt lane, lined with a planted allée of trees, wild hedgerows or painted fence posts.

Modern Development

By the late twentieth century, lack of rural zoning controls had resulted in too many of the scenic farm clusters being hidden behind new bungalows constructed either singly or in rows right off the highway. Some of the oldest nineteenth-century homes are abandoned and sinking into the ground, with a mobile home upstaging them. Most often, however, even well maintained buildings begin to suffer from a lack of context and setting as their surrounding plantings are lost and not replaced. Without its woodlot and hedgerows, the farmstead looks very bleak. An overzealous farmer may even leave a house sitting visually abandoned in the middle of a large potato field. Modern styles of metal barns and mobile homes look even more out of place when they are added to farms in a linear fashion along the road without creating a new-planted farmyard cluster for the benefit of future generations. While the memory-rich images of winding laneways leading into cosy groupings of outbuildings and gabled farmhouses nestled into protective tree groves still tell the story of generations of Prince Edward Islanders and help define the ideal PEI rural landscape for many viewers, such heritage scenes are becoming increasingly endangered. The current trend is for retiring farmers to sell their land for conventional lot subdivision. This loss of agricultural land and heritage cluster farm patterns is facilitated by the lack of planning in unincorporated rural areas. The out-

come is a suburban residential area that rarely contains farmers and does little to reflect the cultural history or scenic value of the landscape and local community.

Landscape Scenarios

Landscape impact analysis can be applied to help local and new stakeholders visualize the possible effects of conserving abandoned or economically unviable heritage farm clusters or incorporating new family units into existing clusters by integrating low density multi-family housing into their existing buildings and landscape pattern:

Farm clusters such as this one, located on the highway just a few miles outside the capital city of Charlottetown, are under intense development pressure. While some of the planting has been lost, the buildings are in reasonable condition, and the setting still retains a feeling of heritage integrity (Figure 1.9).

As current trends continue, this farm will either be lost entirely and the land developed into a conventional subdivision, or it will be lost behind the foreground of a new home, built for a son or daughter, with easier access to the roadway (Figure 1.10).

The carefully designed adaptive reuse of the heritage farm cluster into a small multigenerational or multifamily housing cluster can make use of the existing buildings and setting, while conserving and enhancing them (Figure 1.11).

Figure 1.9 Limits of Charlottetown, 1997
Source: Karen E. Lips.

Figure 1.10 Limits of Charlottetown, if Current Trend Persists
Source: Karen E. Lips and Ole Hammarlund.

Figure 1.11 Limits of Charlottetown: Testing New Scenarios
Source: Karen E. Lips and Ole Hammarlund.

Policy Directions

The first priority that emerges from these observations deals with the preservation and support of existing viable scenic farm clusters and family farmsteads,– such an essential feature of the visual heritage landscape of Prince Edward Island – through the establishment of programmes to conserve and enhance their economic viability along with their architectural and landscape architectural elements.

Second, tax credits and grants for heritage planting renewal and architecturally sensitive repair and restoration, and the purchase of development rights, could create much-needed capital. Forward-looking business plan assistance could explore updated forms of farm tourism and niche agriculture for additional income. With the addition of appropriate benefits and incentives, zoning as a scenic area could be turned on its head to be perceived as an advantage rather than a restriction.

Third, the register of heritage sites could be expanded to include small-scale vernacular heritage farm clusters, and their designation should be made attractive with accompanying recognition and honours.

Fourth, as conserved farms become more stable economically and aesthetically, and once again become more attractive life investments for the next generation of farmers, a planning system for incorporating the next generation into the existing cluster pattern could avoid the visually intrusive addition of new houses along the highway frontage.

However, even where the farmsteads have already lost their viability, or face development pressure for economic reasons, there is still present, in these sheltered vestiges of buildings and courtyards, an exciting potential for simultaneously restoring and creating a new sense of rural community. Herein the fifth recommendation: that a new form of farm cluster residential development could accommodate either extended family units or completely new investors within the existing heritage farmstead layout and context. The new farm cluster would not simply be a visually enhanced pocket of suburbia whose replication would continue the ongoing loss of agricultural land. Rather, the concept would be to create a new form of supportive rural infrastructure and lifestyle. The new residents would invest in their own clustered units at a considerable saving due to shared access and services, freeing up funds to buy shares in the common ownership of the farmstead's surrounding agricultural land. In a form of 'rural condominium' ownership, they would participate as a decision-making board in the management of their farmlands. The management style of different clusters could range from leasing the land for traditional crops to collaborating among small-scale resident companies in specialty organic crops, animals and artisan products. The resulting exploration of sustainable landscape and economy could also attract the growing niche market of tourists and

students seeking authentic learning vacation experiences. In this new cluster approach, the conservation of the heritage landscape pattern also addresses some of the many economic and social factors or layers underlying the successful visual picture. The goal is to redefine and reinvigorate the functionality of the scene in modern ways, while conserving its essential visual character and meaning.

Sixth, a well thought-out planning system and design guidelines should be put in place for directing the appropriate conservation and reuse of existing settings into small-scale multifamily clusters. The essential pattern must be retained – the courtyard pattern of a cluster of structures designed to work well with each other and the landscape around them, reinterpreting the story of generations of families and their stewardship of the land. Designs should evoke in new ways the historic period's attention to aesthetic detail, marvellously adapted to the isolated rural landscape of a distant, once-colonial island.

Seventh and lastly, individual frontage road requirements could be eased for settlements of two to eight houses set well back from the road within existing farm clusters, in order to encourage this heritage pattern of development. The cluster of homes could be created by renovating barns and sheds as dwelling units, or by integrating new structures of appropriate scale and detail into the site. New clusters could also be built in old farmyards where buildings have deteriorated, in order to take advantage of and reclaim the mature planted settings. Each newly conserved farm cluster could take on its own character with a specific selection of colours, materials, building forms and details that complement the heritage pattern with a mix of new and old in the architectural design. The multifamily occupants of the new cluster could afford to maintain the long laneway for year-round access, and share sewer, water and power service at a lower cost while taking advantage of advanced sewage treatment technologies.

Cottage Clusters

Historical Pattern

Until the mid twentieth century, coastal development on Prince Edward Island retained the local flavour of fishing wharves and hedgerow-protected farmsteads that had been established in earlier times. During the 1950s and 1960s, many farmers began to put up 'one or two' cottages on the waterfront edge of their properties in order to profit from the newly developing tourist industry. The land parcels' form of long narrow strips, each with its own water access, created the opportunity for a broad range of the population to increase their summer incomes. The eventual outcome of this trend

is a typical pattern of sequential development on waterfront farms. The waterfront acreage has been subdivided into many small lots and sold off for cottages. A house for the next generation, with its own access lane, has been built along the road in the foreground of the heritage farm cluster. In the best examples, the new house is sited back from the highway and offset from the perspective of the heritage home, and the mature planted setting of the farm cluster has been maintained. However, the hedgerows below the farm have often been obliterated for the cottage development.

Modern Development

By the 1990s, water view and waterfront land were under intense development pressure. The dream of a solitary cottage on the shore with wide-open views had deteriorated into bare, unimaginative small lot subdivisions with uneven quality of cottage design, some owners putting up the cheapest box possible or a trailer, while others built their dream retirement home. This odd assortment of structures, combined with a complete absence of planting, has begun to seriously interfere with the historic pattern of spectacular views of pastoral landscape meeting the ocean. The superimposition of approved lot plans on the 1990 north shore air photos indicates that, even if no more land is subdivided, an astonishing number of cottages could still crop up if only the currently approved lots proceed to construction. There is also a disturbing trend of extending the subdivision pattern right over remaining pond-side woodlots, without any protective controls.

Landscape Scenarios

Landscape impact analysis can be applied to help visualize the impact of conserving coastal landscapes and views with specific new approaches to cottage development:

A close-in view of the Cousin's Shore coastline retains much of the traditional pattern of seaside farm clusters, although the protective woodlots and hedgerows have been lost (Figure 1.12).

A widening of the aerial view displays, however, the drastic changes that are already in progress. A variety of cottages have been scattered on lots above the dunes. The presence of power poles indicates that the adjoining fields may repeat the pattern. On the cliff-side peninsula, the presence of white stakes and a newly constructed cottage show that even this fragile shorefront has been conventionally subdivided (Figure 1.13).

If approval for the unbuilt lots is rescinded and no further construction takes place, the heritage landscape could be partially restored by the reintroduction of hedgerows and landscape screening of the existing structures (Figure 1.14). Ideally, development rights could be repurchased on

Figure 1.12 Cousin's Shore, 1990s
Source: Barrett and MacKay Professional Photographers, P.E.I.

Figure 1.13 Cousin's Shore, if Current Trend Persists
Source: Barrett and MacKay Professional Photographers, P.E.I.

Figure 1.14 Cousin's Shore: Testing New Scenarios
Source: Karen E. Lips and Ole Hammarlund.

the peninsula, leaving it untouched by cottages. However, grouping the cottages into small cluster development rather than scattering them as in conventional development could protect more of the shoreline. Even conventional development makes less of a visual impact if alternating lots are kept open for traditional agricultural purposes and hedgerows are reintroduced. However, grouping the cottages into small landscaped clusters can also minimize the area of development.

Policy Directions

At least four policy opportunities present themselves here. First, new coastal multi-cottage subdivision approvals could be limited to small cluster development with closely spaced buildings and a consistent architectural concept of shapes, materials and colours. Next, the cluster concept is not intended to increase the overall density of development, but rather to preserve a large portion of land for natural or controlled agricultural uses, to conserve water views, and to provide practical and environmental advantages in relation to access and technical services. Current half-acre minimum lot requirements, introduced in response to the proliferation of small cottage lots, do not encourage this type of development: the houses are simply too far apart. If, alternatively, the overall development density is one-half an acre per unit, and the units themselves are concentrated on lots of a few thousand square feet, a large majority of the land could be left undeveloped. Next, planning regulations could be put in place to guide the layout design of new cottage subdivisions, conserving traditional land patterns and views by preventing the development of consecutive adjacent lots and mandating the protection or reintroduction of woodlots and hedgerows. Finally, a combination of planning regulations, grants and tax incentives could be applied to conserve particularly important viewscapes, as well as sensitive ecological areas such as erosion-prone coastal cliffs, from development. To discourage further land speculation in these areas, approvals for unsold lots could be rescinded, and/or development rights could be repurchased. This repurchasing system is currently being tested on a small scale on the north shore by the L.M. Montgomery Land Trust.[6]

Viewscapes

Historical Development

Scenic viewscapes, which can be defined as either the gradual or dramatically sudden unfolding of an attractive scene before your eyes as you move along the road into the landscape, are traditionally abundant on Prince Ed-

ward Island roads. Generally, the viewer appreciates the seasonal change of working landscapes with animals and crops, and the wide views of coastline, harbours and pastoral landscapes framed by woodlots and hedgerows. This is the landscape fabric that adorns the tourism posters and encourages drivers to stop, admire and take photographs.

Modern Development

Precise identification and protection of the viewscape experience has become increasingly problematic with the proliferation of strip development of houses, cottages, farms and industrial structures on island highways. The areas within the cone of vision of the scenic view are typically large, and the scope varies constantly as the viewer moves. However, since the foreground is dominant in any picture, the visual control of roadside development is especially critical in the framing of views.

Landscape Scenarios

Landscape impact analysis can be applied to help visualize the dramatic effects on the viewscape of different approaches to development within its frame.

What is it that makes the French River Wharf so unique that the viewer must stop to take a picture? The attractive features of the scenic wharf enjoy a consistency similar to that of the farm cluster: closely spaced structures of similar sizes, shapes and materials, defining in this case not a farm yard but a wharf. Someone started painting the sheds in bright colours, and others followed suit with either matching or complementary tones. With a few lobster boats in front, and the reflection in the still waters of the river, the scene becomes complete (Figure 1.15). However, careless obliteration of this view is only too possible. Already, development of houses in the back-

Figure 1.15 French River, 1990s
Source: Barrett and MacKay Professional Photographers, P.E.I.

ground field has begun to interfere with the definition of the wharf outline, so that it no longer stands out as clearly in the landscape.

If uncontrolled subdivision continues in the background, the wharf will eventually lose its dominance in the visual composition. Keeping the wharf structures painted in brighter colours than the background could help somewhat, as could the screening of new structures with trees. The total effect, however, is no longer a 'postcard perfect' picture (Figure 1.16).

Protection of the foreground view is absolutely essential. This is one place where new structures, even with adjoining hedgerows, would seriously impact the scene. The view of the wharf from the road vantage point could disappear (Figure 1.17).

Ideally, in order to maintain the clearest and most dramatic picture, the fields behind and alongside the wharf could be kept free of visually competing development. Trees could be planted to screen any existing structures (Figure 1.18).

Policy Directions

Clearly, the selection and designation of key and representative viewscapes is necessary to prevent their disappearance by thoughtless development within the view frame. Moreover, particular attention is required to con-

Figure 1.16 French River, if Current Trend Persists
Source: Karen E. Lips and Ole Hammarlund.

Figure 1.17 French River: Testing New Scenarios (1)
Source: Karen E. Lips and Ole Hammarlund.

Figure 1.18 French River: Testing New Scenarios (2)
Source: Karen E. Lips and Ole Hammarlund.

serve the defining features of the view, such as, recognizing the dominance of features on hills and in the foreground, and promoting appropriate development and planting schemes. Viewscapes can also be protected by zoning controls that limit new roadside building construction to within village limits, to conserve the traditional change in panorama from open pastoral views to closely spaced village structures. And new rural construction could be limited to farm and cottage cluster-style development that maintains mature plantings and reintroduces selected planting in the traditional patterns. Restoration of hedgerow and tree planting can generally enhance viewscapes, as long as key vistas are identified and kept open. Last but not least, imagery matters in the protection of the viewscape. Design guidelines could ensure that new buildings of appropriate form and detail can complement, rather than detract from, the heritage village and rural landscape. Incentives could be put into place to conserve and restore existing heritage buildings and details.

Conclusion

The challenge and goal of the proposed community-based visualization exercises is to develop an effective process at the local level for recognizing the essential values of the landscape. Ideally, the 'site-specific' picture-oriented practice of public participation and education will further anchor islanders' attachment to place and inspire support for new forms of land stewardship. With this all-important support at the grass-roots level, politicians and government departments can confidently introduce new development policies and guidelines to direct the preservation and enhancement of the special, authentic character of the PEI landscape through the changes of the twenty-first century. Ongoing care must be taken to keep policies and guidelines effective in the creation of the actual visual sense of place, and to avoid the pitfalls of conventional word-based general land use planning. While the visual pretesting illustration of various landscape scenarios can aid in decision-making and policy direction, demonstration projects on a variety of scales can make the process come alive. Specific pilot projects with easily visualized results can be established at differing, complementary levels of viewer experience and participation within the community-based planning zone. For example, for a 'wide viewscape' pilot project, the community designates a short scenic route within the planning zone and applies the visual process and policy to protect and enhance the sweeping views of coastline or hedgerow-lined fields. For the 'middle viewscape' project, the community chooses and visually frames one or two particular cultural landscape vistas within the zone, such as farmscapes, using visual process and policy. In the 'personal viewscape' initiative, the community

chooses individual sites within the zone for detailed conservation, such as the planting of laneways or adaptive reuse of farm cluster outbuildings for agro-tourism or local food marketing.

A planning process that relates to the actual landscape and its changes over time can be a valuable tool in bridging varying interests, by shifting the focus back and forth from small-scale issues and immediate conflicts to a broader perspective and a longer time horizon. Conserving the distinctive pattern creates a framework for layers of meaningful, non-destructive new development. As we become more aware of the landscape patterns we create, we can see how they are profoundly and directly linked to how the landscape works, socially, economically and ecologically. While visualization is the key to its success, effective visual landscape planning can be much more than a pretty picture.

Notes

1. Historical geographer Clark analyses the PEI landscape over time, although his 'patterns' are not actual landscape features but visual representations of statistical census data onto island maps, showing the interrelationships over time of cultural settlement and crop and animal distributions, interpreted against a discussion of natural setting and sociopolitical history (Clark 1959).
2. 'The reading of the land indirectly or directly through [Montgomery's] images by the millions of tourists who have since visited PEI adds multiple layers of meaning to any cultural perception of the place,' states Epperly (2007: 174). She also points out that the choice of Cavendish (the site of Anne's fictional home) for PEI's National Park was due to the success of Montgomery's writing.
3. By overlaying transparencies of graphic data such as landform and vegetation for a specific region or land parcel, McHarg (1969) developed a powerful design tool long before computers and digitization made such an exercise more accessible.
4, The 2009 Commission on Land and Local Governance decried the lack of progress in viewscape protection planning, and recommended that a "community-based approach has the greatest potential to provide tangible results" (2009: 58).
5. A major recommendation of the Round Table was to provide individual farmers with incentives and environmental education in order to improve existing hedgerows and establish new ones.
6. L.M. Montgomery Land Trust was established in 1994, funded in part by the estate of the artist Marc Gallant.

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