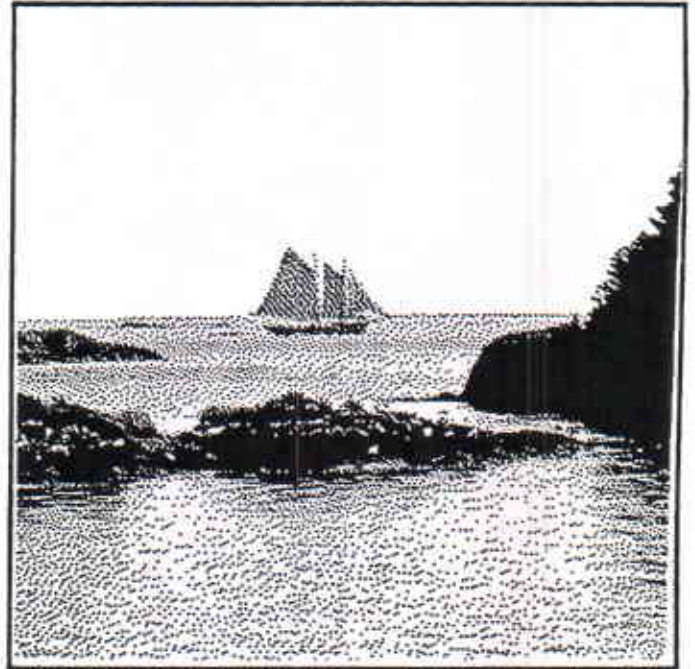


METHODS: SCENIC AREAS



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The methodology used to identify scenic areas on the islands of Islesboro, Vinalhaven, and North Haven was derived from A Proposed Method for Coastal Scenic Landscape Assessment, by Holly Dominie and Mary Droege, 1987, and the Scenic Inventory, Mainland Sites of Penobscot Bay, by Terry DeWan and Don Naetzker, 1990. These studies were sponsored by the Critical Areas Program as part of an ongoing effort to conduct scenic inventories throughout the coastal region. The assumptions that were made for these earlier works were evaluated and changes made where necessary to suit the specific conditions of the Penobscot Bay islands. The majority of the text in this section is adopted from these earlier sources.

Physiographic Regions

The approach used in this study recognizes that visual character varies by physiography (USDA Forest Service, 1974). The State Planning Office has identified five physiographic regions in coastal Maine, based upon The Natural Regions of Maine, Adamus, 1978:

- Region I: Southern beaches and estuaries
- Region II: Mid-Coast Maine, with its linear peninsulas and bays
- Region III: Penobscot Bay, characterized by numerous granitic islands
- Region IV: Downeast Maine, with its rocky headlands and bluffs
- Region V: Rolling headlands and forested regions along the great tidal rivers and adjacent to the coast.

These Regions are shown on Figure 1.

Adamus describes Penobscot Bay, including the major islands, as part of the Greater Penobscot Bay Subregion of the Coastal Region of Maine. It is primarily bounded by Penobscot Bay, but actually extends from Muscongus Bay to Frenchmans Bay. The rocky islands are more numerous here than elsewhere on the coast. The majority of the islands are rather rounded and dome-like. The Camden Hills, the mountains of Mount Desert Island, and the Blue Hill region, which form the background for many of the views from the islands, are actually part of the Uplands Region. The shoreline of the islands, typical of the whole of Penobscot Bay, are moderately indented, except in the western portion of the bay, between Rockland and Belfast, where the coast is relatively straight.

Sand beaches are scarce throughout the region. More ponds and freshwater wetlands are present in this region of the coast than the areas to the southwest. All three islands have extensive areas of freshwater wetlands. Spruce-fir forests occur over much of the islands and immediate coastal areas.

Land use in Penobscot Bay as a whole tends to be more rural than in the southern coastal areas. Many overgrown agricultural fields extend to the water, affording

periodic views from the public roads. Seasonal homes are common throughout the Bay, taking advantage of the highly diverse landscape and views of the water. A strong fishing industry still exists in the larger towns, villages, and seaports. Tourism, centered around the Camden/Rockport area, is a mainstay of the local economy. Granite cutting, taking advantage of one of the Bay's most abundant natural resources, had been a major source of employment up until fifty years ago.

Summary of Method

The method developed by Dominie and modified for this report is a "professional approach" rather than a "public approach". This means that it relies upon the judgement of trained observers in the evaluation of factors chosen to indicate scenic quality. Public methods rely upon public involvement in making judgements about scenic quality. The rating criteria for this approach have been selected because they have been demonstrated, through research into public perception, to be important indicators of what constitutes a scenic landscape.

Eight indicators of scenic quality form the basis of the rating scheme. Where these indicators occur in close proximity with one another, the area is considered to be of high scenic quality. The indicators evaluated include:

- landform
- open land
- shoreline configuration
- special scenic features
- views of water
- land use
- vegetation
- overall landscape composition and effect.

The first five indicators were evaluated by examining data from existing USGS maps and other sources of mapped information; the remaining three were assessed in the field.

The basic steps of the procedure are outlined below:

Step I - Determine Scenic Indicators: A sample analysis of topographic information, slopes, open spaces, shoreline configuration, scenic features, and water view indicators was performed for a sample evaluation of the Rockland-Camden area in 1989 during the initial phase of the Penobscot Bay Scenic Inventory. Results of these test sites were evaluated with the Critical Areas Program staff and used to set minimum standards for the mainland sites of Penobscot Bay. All the criteria used in the mainland study were re-evaluated and some adjustments made to account for the more subtle topographic changes, the smaller scale of development, and the more limited amount and size of open spaces on the islands.

Step II - Office Rating of Scenic Indicators: Landform, open land, shoreline configuration, special scenic features, and views of water were rated in the office and the data transferred to acetate overlays. The likely candidate areas became apparent once the overlays and topographic maps were evaluated. Results were recorded on Preliminary Scenic Area Evaluation Forms and became the basis for the field work.

Step III - Field Evaluation of Preliminary Sites: Each Preliminary Scenic Area was field evaluated during the summer of 1990 to rate land use, vegetation, and overall composition and effect. Viewshed management recommendations and additional comments were recorded for inclusion on the Scenic Area Evaluation Form. Photographic documentation in 35 mm slide form was made using a 50 mm lens. The slides are on file at the office of the Critical Areas Program. A color photograph of each site was also taken and used in the master copy of the final report. Boundaries of each scenic area were later drafted on USGS maps of the area. The graphic analysis of each area also show the extent of the views, the number of public viewpoints, and the approximate viewing angle.

Step IV - Classification: The office and field ratings were combined and the scenic areas classified into groupings that could be considered of local, statewide, and national significance.

Rationale for Selecting Indicators

The field of visual assessment has matured considerably over the past two decades. There is now substantial information about what people perceive to be scenic in the American landscape. Since only one perception study has been conducted in Maine (by Steinitz, for Acadia National Park, 1990) we must infer from studies of other landscapes what is considered to be scenic along the Maine coast. The eight indicators were selected for this study for the following reasons:

- 1. Landform.** Some aspect of landform is nearly always a major factor in expert-based scenic assessments. Past measures have included landform variety (USDA Forest Service, 1974), landform type (Linton, 1968), steep topography (Lewis, 1963), and others. These studies have assumed that as relief or slope increases, the scenic value of a place will also increase. This assumption has generally been validated in public preference tests. Zube et. al. (1974) found that along with land-use diversity and naturalism, relative relief was an important predictor of scenic preference. This finding has also been supported in research by Miller (1984), Pitt (1976), Pearce & Walters (1983), and others.
- 2. Open Land.** Open land is defined here as maintained or abandoned agricultural land or wetland. Open land was inventoried for the scenic assessment for a number of reasons. Land use diversity, especially agricultural and natural land uses, has been shown to be an important predictor of scenic preference (Zube, 1973). Open space in a landscape

which is mostly forested, as is Maine, adds visual variety, complexity, and interest. In general, variety, complexity, or diversity are all accepted and frequently use indicators in scenic assessments (Litton, 1982; US Forest Service, 1974; Barringer, 1982), and have withstood the scrutiny of empirical testing (e.g. Kaplan, Kaplan & Wendt, 1972; Miller, 1984; McCarthy, 1979). Open areas in the Maine coastal landscape also take on special significance in that they frequently provide visual access to the water and are often seen in the context of old farmsteads, stone walls, specimen trees, and other memorable features.

- 3. Shoreline Configuration.** Configuration refers to the amount of irregularity in the shoreline. Shorelines with coves, points, islands, promontories, bays, peninsulas, and other features are considered more configured than those with straight, uncomplicated shorelines. Shoreline landscape assessments nearly always include some measure of shoreline configuration as an indicator of scenic value (Harper et. al. 1978; Mann, 1975). There is little direct support for this measure in the research, but there is considerable evidence of a broader nature. As mentioned previously, complexity is a widely accepted determinant of preference; configuration increases complexity. Another aspect underlying shoreline configuration is that of enclosure. Those areas showing high configuration tend to give the perceiver a stronger feeling of being enclosed by the landscape. This landscape characteristic has been shown to be related to scenic preference (Ward, 1977; Pearce & Waters, 1983; Gobster, 1986).
- 4. Special Scenic Features.** Special scenic features are natural or cultural features which, by their mere presence, have a positive influence on people's perception of scenic quality. Examples include beaches, lighthouses, harbors, and historic sites (Pemaquid, 1986; Sterling, 1935), historic forts (Maine Atlas, 1985), working harbors (Acheson, 1978; DOT 1978 & 1986, Merrill, 1986 pers. comm.), historic wrecked schooners (Maine Atlas, 1985), and beaches (Duffy, pers. comm. 1986; Maine Geological Survey, 1986). Expert-based scenic shoreland assessment often include cultural and natural features of this type in their checklists criteria (Harper et. al. 1978; Lewis, 1963). There is evidence that cultural features hold symbolic meaning for society and influence public perceptions of the visual quality of an area (Anderson, 1981). There is also considerable evidence that shows beaches are a highly preferred type of shoreland scenery. In Zube & McLaughlin's Virgin Island Study (1978) sand beaches ranked highest over 15 coastal types. Studies by Palmer (1978) in Massachusetts and Banerjee and Bollub (1976) in California agree.
- 5. Views of Water from Major Roads.** It is generally accepted that the presence of water can be a powerful predictor of scenic preference (Kaplan, 1977; Litton et. al. 1971). Some researchers have shown that view quality can depend on specific characteristics of the view in relation to the observer. Litton (1972) suggest that two of these characteristics include

the position of the observer in relation to the focus of a view, and the distance one can see in a view. "Superior" views, views in which the observer is looking down upon the landscape, and views that one can see for a long distance, often have higher scenic value than those that are blocked or partially enclosed. Federal land management agencies have developed methods for visual resource evaluation rating to determine how long a view lasts and the size of the resource seen. They contend that lands which more people see for long periods of time and during periods of recreational activity are more aesthetically important than those which few people see or are seen for only short periods of time. Lands with the highest sensitivity include areas seen from major roads for long duration. By this same rationale, large water bodies have higher value than smaller ones because more people see them (USDA Forest Service, 1974).

6. **Land Use.** Land uses encompass the changes people make to the landscape. Perception studies conducted under the auspices of the USDA Soil Conservation Service for towns in Massachusetts (Dominie, 1976; Palmer, 1978; and USDA SCS, 1978) identify many cultural modifications of the environment that either detract or contribute to scenic quality. Pastoral, symbolic features, and traditional uses, are positive components while landscape scars and obtrusive structures are detractors, for instance. Land use compatibility, the degree to which development is visually unified with its setting, also has a positive influence on perceptions (Nassauer, 1978). Overall condition is a measure of how well the landscape is cared for.
7. **Vegetation.** Visually interesting or functional vegetation is frequently included in visual assessments. The presence of vegetation used for screening and softening the built environment has been documented as a positive influence on perceptions (Palmer, 1978). Other research has shown that forest and field edges, agricultural patterns, and manicured landscapes are also positive predictors of scenic quality (Zube, Pitt, and Anderson, 1974).
8. **Landscape Composition and Effect.** The overall effect of the landscape is important as well. The better the coherence and ease with which a landscape and its parts are understood (Kaplan R., 1975), the higher the mystery (Kaplan, R., 1975) and land use diversity (Zube, 1973), and the greater the degree of naturalism (Zube, 1973; Kaplan et. al. 1972), the more scenic an area is likely to be perceived. Roads that change elevation are also considered more scenic (Palmer, 1978).

Scenic Indicator Ratings

The eight Scenic Indicators were assigned a value corresponding to its relative importance in the scenic rating. A total of 100 points was allocated to rate each Scenic Area, apportioned among the following indicators.

1. Landform		9 Points
Elevation	6 Pts.	
Slope	3 Pts.	
2. Open Land		6 Points
3. Shoreline Configuration		6 Points
4. Scenic Features		9 Points
5. Scenic Quality of Water		30 Points
Duration	9 Pts.	
Type of Water	12 Pts.	
Qual. of Horizon	9 Pts.	
6. Landscape Character		22 Points
Land Use	7 Pts.	
Road Design	6 Pts.	
Settlement	9 Pts.	
7. Vegetation		9 Points
8. Landscape Composition		9 Points
Total		100 Points

Scenic Indicators

The following section describes the indicators that were used, their relative values, and provisions for determining scores for each indicator.

1. Landform: The islands of Penobscot Bay are not known for their great change in elevation or significant landforms. A review of the ridgetops, heights of land, and hilltops within the study area yielded an average height of 110'. The heights sampled ranged in elevation between 10' and 210'. The hills and mountains of special interest include Ames Knob on North Haven (140'), and Isle Au Haut Mountaint (el. 180'), Ambrust Hill (el. 110'), and Tiptoe Mountain (el. 136') on Vinalhaven. A number of other rounded hills add variety to the silhouette of the islands, especially when viewed from the mainland or from the waters of Penobscot Bay.

Elevation. When compared to the mainland, even relatively slight changes in elevation were found to be significant. Points were awarded to landforms having the following elevations:

50' - 75'	1 Point
75'-100'	3 Points
Over 100'	6 Points

Slope. A sampling of slopes along the coastal region of Penobscot Bay demonstrated a range of between 4% and 55% with a significant average of 19%. Points were awarded to scenic areas having the following sustained gradients within the viewshed of the public viewpoint:

25%-40%	2 Point
Over 40%	3 Points

2. **Open Spaces:** A sampling of open spaces was taken based on USGS quad sheet information in order to qualify sizes of significant parcels. Open areas ranged in size from 2-3 acres to 25 acres. Several types of open space are found on the islands: agricultural fields (both active and abandoned), freshwater and saltwater wetlands, and village/developed land. The most significant open space were fields that afforded views to the water while providing a welcome contrast to the woodlands along the road. Most of the larger open spaces on the islands seem to be maintained by people who have a keen interest in preserving view corridors. There are many opportunities on all the islands to open up additional views for the benefit of the general population.

Points were awarded for open space according to the following:

1-5 acres	3 Points
6-10 acres	4 Points
Single fields >10 acres	5 Points
Multiple fields >10 acres	6 Points

3. **Shoreline Configuration:** Configuration refers to the amount of irregularity that exists within the shoreline. The measurement of configuration considers the distance to the nearest shoreline. Areas with deep coves, peninsulas, and near-shore islands are usually more complex and highly configured, and consequently of greater scenic character. Related to configuration is the perception of enclosure. Most of the highly configured landscapes gave a feeling of at least partial enclosure, which is often related to scenic preference (Dominie, et al).

Points for Shoreline Configuration were awarded according to the following measurements:

Configured w/in 1/2 mile	3 Points
Configured w/in 1/4 mile	6 Points

4. **Scenic Features:** Scenic features (e.g., sand beaches, islands, bridges, lighthouses, harbors, moorings, cottages) were evaluated on the type and number of features, as well as their location within the view. Foreground and midground locations score higher than those in the background. Points for Scenic Features were awarded according to the following schedule:

Significant Feature in Background (> 3 miles)	1 Point
Significant Feature in Midground (1/4 -3 miles)	3 Points
More than one feature with at least one in Midground	6 Points
Multiple Features in Foreground (within 1/4 mile)	9 Points

5. **Views to Water:** Public views of water, primarily toward Penobscot Bay, were rated according to the duration of view, the type of water, and the viewer to water relationship. The measurement of duration was derived from USGS 7.5 topographic maps, measured along the public road. The duration is also be influenced by the travel speed, condition of road, the intent of the viewer, and opportunities to pull off the road.

Points were awarded in each area according to the following schedule:

A. Duration of View

Less than 2/10 mile	3 Points
2/10 to 1/2 mile or numerous short views	6 Points
Greater than 1/2 mile	9 Points

B. Type of Water (Assumed High Water)

Small fresh or saltwater (< 1/4 mile closure)	6 Points
Large body of fresh or saltwater	9 Points
Large saltwater body with associated saltmarsh, pond, bay, or cove	12 Points

C. Quality of Horizon

Completely open or completely closed horizon with little vertical interest	3 Points
Combination of open and closed horizons with little vertical	

- interest or completely closed horizon with vertical interest 6 Points
- Combination of open and closed horizons with vertical interest 9 Points

6. Landscape Character: An inventory of the following positive and negative landscape characteristics was compiled during the field investigation. This information was used to evaluate the effect that land use, roadside characteristics, and settlement characteristics has on scenic quality.

A. Land Use (Positive)

1. Agricultural
2. Vernacular Architecture
3. Old Cemetery
4. Distant Village Skyline or Edge
5. Mooring/Harbor Area
6. Mature Forest
7. Other

Land Use (Negative)

1. Lumbering/Clearcut/Extensive Slash
2. Exposed Mining Operations
3. Utility Corridor
4. Incompatible Commercial or Industrial
5. Other

Points were awarded based upon effect on Scenic Quality:

Minimally Positive	3 Points
Positive	5 Points
Strongly Positive	7 Points

B. Roadside Characteristics (Positive)

1. Tree Canopy
2. Lined with Sugar Maples or other mature trees
3. Conforming to Contours
4. Gentle Curves and Rolls
5. Street Scale
6. Urban Plantings
7. Other

Roadside Characteristics (Negative)

1. Angular Road Cut or Fill
2. Long, Straight, Flat Stretch
3. Other

Points awarded based upon effect on Scenic Quality:

Minimally Positive	1 Point
Positive	3 Points
Strongly Positive	6 Points

C. Settlement Characteristics (Positive)

1. Distinct Village Gateways
2. Prominent Community Buildings and Parks
3. Harmonious Building Masses and Heights
4. Vernacular or Harmonious Architecture
5. Historic District
6. Statue, Fountain, Bandstand
7. Tree Lined Street
8. Stone Walls
9. Other

Settlement Characteristics (Negative)

1. Strip Development
2. Dilapidated Structure
3. Incompatible Architecture
4. Obtrusive Signage
5. Pollution
6. Structures Blocking Views
7. Automobile Intrusions (Traffic, Sales, Junkyards)
8. Other

Points awarded based upon effect on Scenic Quality

Minimally Positive	3 Points
Positive	6 Points
Strongly Positive	9 Points

7. **Vegetation:** The quality of the vegetation and its contribution to the visual environment were assessed using the following criteria to evaluate the effect on scenic character: no effect, minimal positive effect, positive effect, or strong positive effect.

Vegetation (Positive)

1. Park Like
2. Agricultural Patterns
3. Field and Forest Edge
4. Woodland Maturity
5. Framing Qualities

6. Vegetation Mix, Contrast, and Type
7. Other

Vegetation (Negative)

1. Clearcut/Slash
2. Screening View
3. Overgrown Field
4. Other

Points were awarded according to the following effects on scenic quality:

Minimally Positive	3 Points
Positive	6 Points
Strongly Positive	9 Points

8. **Composition and Effect:** The overall integrity of an area was evaluated to determine its effect on visual quality. The following components of the landscape were included in this evaluation.

Landscape Composition Components

1. High Diversity
2. Mystery/Surprise
3. Degree of Naturalness
4. Distinct Separation of Land Uses
5. Spectacular Imagery
6. Historic Integrity
7. Pastoral Qualities
8. Cohesiveness
9. Permanence
10. Other

Points were awarded based upon the positive effect of landscape composition according to the following schedule:

Minimally Positive	3 Points
Positive	6 Points
Strongly Positive	9 Points

Limitations of the Method

A few limitations to the method should be noted. As mentioned earlier, the method is based upon scenic indicators selected by resource professionals. There is evidence in the literature that such "expert" approaches are not always as reliable as those studies where public perceptions about the landscape in question are examined. Given additional resources it would be advisable to confirm the results from this study with a public perception study.

Dominie noted a potential bias in favor of the natural over the built landscape. Only those areas that rise to the top during the office analysis are field checked. They are considered to have "potential" for scenic distinction based upon indicators which, with the exception of special features and open land, relate to the natural characteristics of the landscape. Consequently, she felt that there may be areas, particularly villages, that are scenic by virtue of their architectural characteristics and development patterns, but go unidentified by this assessment method. A review of the results of the Penobscot Bay study, however, seems to disprove any bias toward settled areas. The villages and settlements in the bay are disproportionately represented among the highest rated landscapes. This is the result of the character of the underlying land (primarily deep, well configured harbors, often sheltered by islands) as well as the orderly pattern of development that characterize these places.

Dominie also notes a limitation in the earlier work which examined views from major public roads, often omitting spectacular views from little travelled, but still public byways. In general, Penobscot Bay does not have the major roadway infrastructure that is common in Regions I and II. Many of the evaluations were performed on secondary roads, which require more attention to the road than to the scenery.

The field reconnaissance is also biased in favor of views from the land, rather than what can be seen from the water. In theory all the views from Penobscot Bay are "public" and should be included in the assessment as funding becomes available.