Description Sand Beaches

Sand beaches occur along the coast of Maine and are concentrated in the southern part of the state, in York and Cumberland Counties. A variety of geomorphic forms and botanical associations are found along the coast. The features are the result of the interaction of several processes of the beach system and as a result are in a constant state of change.

Considerations in Registration

A. Values and qualities represented by feature (specifically including any unique or exemplary qualities of the feature).

Maine's sand beaches form one of the state's most valuable coastal resources since they represent most of the public access, intensive recreational use, open space and salt marsh portions of the coastline. Diverse scientific and educational values are numerous on the sand beaches in Maine and are strong criteria for significance. Many beaches display excellent examples of certain geomorphic features or geological processes. The same is true for botanical features and processes.

Beach systems are among the most dynamic of geologic environments. The form and position of beach and dune features respond to slight changes in the process agents which control their development. The geologic fabric of the bedrock units in Maine exerts a pronounced control on its coast, whose highly irregular and deeply embayed outline contrasts sharply with the rest of the coastline south of New Hampshire. The limited sand supply and coastal geometry make Maine's beach forms unique along the East Coast.

Maine's beaches provide evidence of sea level rise rate, knowledge of which is essential for coastal zone planning.

All undisturbed coastal sand dune and berm plant habitats in Maine are significant simply because of their limited extent. Almost two-thirds of Maine's original dune fields are now heavily developed or altered. Of approximately 6400 km of coastline in Maine, the beaches with large undeveloped dune fields, Popham, Reid, and Seawall, represent only 8.7 km of coastline length. In contrast beaches with major dune fields which are now disturbed represent 18 km of coastline. Smaller scale undisturbed dune and berm plant habitats are significant because such habitats are rare in Maine. Good stands of species with limited area in the state, e.g. American Beach Grass, Beach Heather, Wormwood, Jointweed, are found on a few of the remaining undisturbed dune habitats. Also, a few coastal dune plants reach their coastal range limit in Maine. The presence or abundance of many species have been found to decrease from south to north but these trends are already difficult to study in detail because of extensive development on most of Maine's sand beaches.
B. Probable effects of Uncontrolled Use (specifically in relation to its intrinsic fragility).

The attractiveness of beach and dune areas for potentially damaging recrea-
tional and development uses, coupled with the fact that these usage pressures
are concentrated on only one to two percent of Maine's coastline, could result
in the destruction of these unusual beach systems. The lack of use and manage-
ment policies, and absence of basic data for Maine's unique beach systems have
led to expensive and usually futile erosion prevention measures. This inevi-
tably results in public controversy over causes of beach erosion and shore pro-
erty loss. Continued development of Maine's beaches without a full under-
standing of fundamental beach system and dune ecosystem dynamics could result
in the eventual disturbance of the remaining sand beaches in the state. The
maintenance and conservation of these areas is especially significant since
they display a variety of values including: scenic, zoological, geological,
botanical, educational, and scientific. Proper management of the remaining
sand beaches is necessary in order that they be preserved for future use.

C. Presence and Probable Future Use (specifically present and future threat of
destruction).

Sand beaches on the coast of Maine have a variety of present uses. These
range from state parks and conservation easements to private ownership and
highly developed areas. Beaches along the coast of Maine are subject to the
increasing pressures of development and alteration. A large percentage of
the coastline is in private ownership making probable future use uncertain.

D. Level of Significance.

Sand beaches in Maine are of regional significance because they represent a
unique habitat on the Atlantic Coast of North America.

E. Probable Effects of Registration - positive and negative (specifically
including the economic implications of inclusion of the feature on the
Register).

The expected positive effect of registration will be to give official recog-
nition of the importance of sand beaches by the State. Also, landowners will
be informed of the importance of sand beaches in Maine. Registration will
also aid in the monitoring of sand beach systems in the State and, perhaps,
aid in their conservation.

The expected negative effect of registration would be any publicity generated
by the registration process. Publicity would attract visitors, which might
result in the destruction of the fragile dune areas and their related plants.
No substantial economic implications should result from the registration pro-
cess.

F. Programs Which Affect or Are Relevant to the Feature.

1. Zoning by Land Use Regulation Commission
2. Shoreland Zoning
3. Wetlands Laws
Conclusion

A. Conformance with Definition Contained in the Act

The Act defines critical areas as being: "areas containing or potentially containing plant and animal life or geological features worthy of preservation in their natural condition, or other natural features of significant scenic, scientific, or historical value."

Significant sand beach systems support rare and unusual geological, botanical and zoological features that are worthy of preservation in their natural condition. Thus, significant sand beach systems meet the legislated definition of critical areas.

B. Conformance with the Guidelines for the Registration of Critical Areas, Adopted by the Critical Areas Advisory Board on September 11, 1975.

Section 1. Knowledge of the Feature

The report Geological and Botanical Features of Sand Beach Systems in Maine and Their Relevance to the Critical Areas Program of the State Planning Office, was prepared for the Critical Areas Program in order to provide detailed information on Sand Beach Systems in Maine.

Section 2. Representation on the Register

Three sand beaches, Popham, Reid and Seawall, have been included on the Register of Critical Areas as significant bird nesting sites.

Section 3. Variety of Values

Sand beaches generally have a variety of values including: scenic, recreational, botanical, zoological, geological, scientific, and educational.

Section 4. Scarcity

Sand beaches are rare in Maine. Out of 6400 km of coastline sand beaches represent only 121 km of this length.

Section 5. Quality

Twenty-seven sand beaches, out of a total 200 have met the criteria outlined in the "Methods" section of this report.

Section 6.

Sand beaches are dynamic systems. They are subject to the influences of wind, waves, sand source areas, storms and human activity. Their persistence is related to the interaction of all these processes; and as a result beach systems are constantly changing.

Section 7. Geographic Distribution

The majority of the sand beaches are found south of Reid State Park on the Coast of Maine in York and Cumberland counties. These beach systems are unique along the Atlantic Coast of the United States.
Section 8. Use
Sand beaches have potential scientific, educational and recreational uses.

Section 9. Manageability
Due to the many processes that influence sand beach development, management of the areas requires thorough investigation of the implication of any alteration to the system.

Section 10. Potential Economic Effects
Registration of sand beaches should have few economic implications for the landowners.

Section 11. Potential Effect on Conservation of Feature
Registration is expected to have a positive effect on the conservation of sand beaches in Maine.

AUTHORS' RECOMMENDATIONS

The authors make the following recommendations to the Critical Areas Program for the beach systems discussed in this report:

1. Because Maine's beach systems have unique value as a coastal resource and because development pressures are increasing, it is urgent that the twenty-seven described beach systems be evaluated for inclusion on the Critical Areas Registry.

2. Andrews Beach on Long Island in Casco Bay and Lubec Spit in Lubec met the criteria for recommendation as critical areas but were not field checked. These should be visited and included in the final list.

3. Because of the fragile nature of the vegetational compartments of beach systems, it is important that these areas be monitored and management plans developed.

4. As additional information on other beach systems becomes available, if the information indicates that a beach meets the geological and botanical significance criteria developed in this report, that beach should be added to the Critical Areas Registry.


