

Geologic Site of the Month
May, 1997

"Shells on the Beach"



43° 46' 55.31" N, 69° 43' 25.02" W

Text by
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Introduction

During WWII the property that is now Reid State Park was used as a practice rocket firing range for aviators flying out of the Brunswick Naval Air Station. As a result of that use, and because Reid State Park had severe storms and wave action during the winter of 1996-1997, over 100 pieces of practice ordnance have been found by park staff. To date none of the pieces were found to be live. The Department of Conservation (DOC) has requested, however, that the Army Corps of Engineers do a thorough cleanup of the area for public safety reasons.



Photo by Maine Geological Survey

Figure 1. Sign posted at Reid State Park in the spring of 1997.



Shells on the Beach

Figure 2 shows a WWII-vintage rocket motor found on the beach. Corrosion and encrustation have been removed from the lower portion of the rocket. The longer bar on the scale is 4 inches long.



Figure 2. WWII-vintage rocket motor found on the beach. Corrosion and encrustation have been removed from the lower portion of the rocket. The longer bar on the scale is 4 inches long.

Target Practice

Figure 3 was taken in 1964. The diagonal line highlighted by the white arrow is a cut-over area in the woods used by aviators to line up for target runs on the beach. The black box shows the area of the beach used as a target.



Figure 3. Aerial photo taken in 1964.



Changing Beach Profiles

Marine geologists Joe Kelley and Steve Dickson from the Maine Geological Survey visited Reid Beach (Figure 4) on April 16, 1997 to examine beach erosion and the location of shells found on the beach profile. Recent spring northeasters had made a steep beach profile. The sand dunes were eroded, but not to a depth of the dune scarp left by the January and February 1978 blizzards. A previous erosional episode exhumed metal fragments on the beach in 1976 (Nelson and Fink).



Photo by Maine Geological Survey

Figure 4. Marine geologists Joe Kelley and Steve Dickson from the Maine Geological Survey visit Reid Beach on April 16, 1997 to examine beach erosion and the location of shells found on the beach profile.



Changing Beach Profiles

The geologists concluded that the ordnance is most likely concentrated along a buried beach profile that is the landward limit of erosion since WWII. In addition, wave action may have reworked the ordnance down the profile from the dunes and berm to the mid and low tide elevations. Figure 5 shows the frontal dune ridge and beach in the area used as a target range.



Figure 5. Frontal dune ridge and beach in the area used as a target range, Reid State Park, Maine.

DEP Clean Up

Sand is expected to move onto the beach this spring as part of the annual cycle of offshore-onshore movement. If the beach is naturally replenished, sand will bury the ordnance during the upcoming summer beach season.

Reid Park is home to piping plovers and least terns that inhabit the dunes and are endangered species. These birds nest from mid-May through July and are particularly vulnerable to disturbances, including cleanup operations, in the nesting areas.

The Department of Environmental Protection's (DEP) Bureau of Remediation is taking the lead on the cleanup effort and will coordinate a review of the plan submitted by the Corps. The DOC, DEP, Department of Inland Fisheries and Wildlife and federal representatives for endangered species will meet to discuss the Corps recommendation and the best way to proceed with a cleanup that is environmentally sound and minimizes the impact to nesting birds. Cleanup will probably be deferred until late fall or early winter.



Safety Plan

Until that plan is finalized, a plan to provide safe recreation was developed by DOC. Some highlights of the plan are outlined below.

- Each day Reid State Park staff visually inspect the beach about two hours prior to each daylight low tide and upon opening the park if tide conditions permit.
- If 2" or 3" rocket motors are found, they are removed from the beach immediately by park staff and placed in a container of water for later removal from the site by the Corps of Engineers' Emergency Ordnance Disposal team (EOD) from Rhode Island.
- If 5" shells are found, then the Corps is contacted immediately and park staff will close the area and remain on site until the EOD arrives.
- Signs alerting the public to this problem are posted at all access paths to mile beach and at several other locations in the park.
- The use of metal detectors by the public is prohibited until further notice.

Some things to note relative to public safety:

- No live shells have been found yet.
- This material has been at Reid for 50 years and periodically has been exposed and handled by people without casualty.



References and Additional Information

Nelson, B.W. and L.K. Fink, Jr., Geological and Botanical Features of Sand Beach Systems in Maine, Maine Sea Grant Publication MSG-B-14-80, 5714 Coburn Hall, University of Maine, Orono, ME 04469-5714

[Mile and Half Mile Beaches at Reid State Park](#)

[Reid State Park](#)

[WWII Rockets Removed from Beach at Reid State Park](#)

