

**When has a rounded cobble not traveled far?
Recycling of corestones from weathered granitoids:
examples from the South Mountain Batholith in Nova Scotia, Canada**

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The presence of paleoweathered horizons within the South Mountain Batholith of southern Nova Scotia has been documented in the past but the research presented herein is part of the first comprehensive study of these horizons. Weathered paleosurfaces, or saprolites, occur at several localities on the granitoid rocks of the South Mountain Batholith of Nova Scotia. There are at least two ages of saprolites within the study area, Pre-Triassic and Pre-Carboniferous. Within these *in situ* weathered horizons are remnant elliptical blocks of unweathered granite, or corestones. These corestones are isolated rounded pods of relatively unweathered granitoid material surrounded by extremely weathered sandy material (grus), formed as a result of intense weathering concentrated along joints and fractures within the granitoid rocks. This weathered material which surrounds these corestones is easily eroded thereby releasing many rounded corestones of various sizes, which may be incorporated subsequently into younger sedimentary units. In cases such as these it is clear that the rounded nature of the

clasts (corestones) has no direct relationship to distance or mode of transport. The rounded boulders, cobbles, and pebbles of granite within the Pleistocene glacial deposits in southern Nova Scotia were probably the result of incorporation of these saprolite-related structures into the glacial sediments, as evidenced by the locally derived nature of the tills (many within 500 m of source).

The implication of the presence of saprolites at unconformities of various ages on the South Mountain granitoid rocks is that incorporation of corestones into sedimentary strata may have occurred in the past. The recognition of this process has possible implications for the interpretation of rounded boulders, cobbles, and pebbles in conglomerates of various ages within the stratigraphic record of eastern Canada. Similar weathered paleosurfaces have been recognized in many areas worldwide and whenever there might be a possibility of incorporation of corestones into the sedimentary record caution must be exercised in interpreting the origin of such rounded boulders.