MA Earth Science Curriculum Frameworks

1. Correlation to Balance Rock/Geology

History of planet Earth

4ESS1-1; 6ESS1-4

Use evidence of landforms to support the claim of erosion or deposition shaping the landscape over long periods of time

Earth's Systems

4ESS2-1 Observe or collect data of evidence that rocks, soil and sediments undergo mechanical weathering and are moved by erosion (from wind, water or ice)

8MS-ESS2-1 Use a model to illustrate that energy from Earth's interior drives convection that cycles Earth's crust, leading to melting, crystallization, weathering, and deformation of large rock formations, including generation of ocean seafloor at ridges, submergence of ocean seafloor at trenches, **mountain building**, and active volcanic chains.

7MS-ESS2-2 Use evidence of ice age and mountain building to explain how Earth's surface has changed over long scales of time vs. seasonal weathering and erosion which occur in short periods of time..

2. Correlation to Water Cycle/Snowmaking

Earth's Systems

5-ESS2-1. Use a model to describe the **cycling of water** through a watershed through evaporation, precipitation, absorption, surface runoff, and condensation.

3. Correlation to Conservation & Stewardship

Lesson/activity available from menu or here - *(Stewardship at Wachusett Ski Area)*

Earth and Human Activity

5-ESS3-1. Obtain and combine information about ways communities **reduce human impact** on the Earth's resources and environment by **changing** an agricultural, industrial, or community practice or **process.**

• Examples of changed practices or processes include treating sewage, reducing the amounts of materials used, capturing polluting emissions from factories or power plants, and preventing runoff from agricultural activities.

Does this overlap with life science *7LS2-5 Evaluate competing design solutions for protecting an ecosystem.*

HS-ESS3-3. Illustrate ***relationships among management of natural resources, the sustainability of human*** populations, and biodiversity.

• **Examples of factors related to the management of natural resources** include costs of resource extraction and waste management, per capita consumption, and the development of new technologies.

• **Examples of factors related to biodiversity** include habitat use and fragmentation, and land and resource conservation.

Note to teachers- The interactive map below could also be used with an elementary life science standard and the same kind of questions written below could be used as an anchoring theme/ prep prior to a field trip.

HS-ESS3-5. Analyze results from global climate models to describe how forecasts are made of the current rate of global or regional climate change and associated future impacts to Earth systems.

• Climate model outputs include both climate changes (such as precipitation and temperature) and associated impacts

MA Climate Clearinghouse Interactive Map also linked to "Working with Data" resources

good resource for analyzing local, historical data on precipitation, temperature, etc.

Sample field trip question could be:

- What organisms on the mountain do you think could have been impacted by a recent weather event, or trend over the past few months, such as drought, excessive wind, rain or frost?
- How could the ski area have been impacted by the same recent weather event