

A Guide to Erosion Monitoring

Learn methods to track the effects of erosion on your property

Why is it important to monitor erosion on your property?

Erosion is a natural part of the dynamic life of a coastline; seasonal changes in wave and storm activity cause sediment to accumulate or be swept away, but this process can be exacerbated by climate change. Keeping track of changes to your property caused by erosion can help you understand your shoreline’s long term potential for change. Recording incidents of erosion over time can also provide important data should you engage a consultant or engineer to develop strategies to mitigate the erosion. A method of erosion monitoring is described in this guide that involves establishing two markers at fixed locations perpendicular to the shoreline, and routinely measuring the distance from the fixed markers to the point of erosion to establish a record of changes. Rest assured, this method is not difficult or time consuming and you’ll be making an important contribution toward efforts to understand change along our coasts.

How to set up an erosion monitoring station on your property

1. Choose a location & identify/install two reference points

Choose one or more locations on your property that experience the most frequent or severe erosion. Identify two points perpendicular to these locations at each area you want to monitor (figure 1) to serve as the reference for your measurements. You can install wooden stakes to serve as your reference points or use an existing landmark on your property to serve as one or both of these points. The best reference points are objects or locations that are fixed and will not move, for example, a spot on a deck or fence, a bird feeder/bird house on a post, a raised garden bed, or even a lawn ornament. Be creative!

The distance between the erosion site and the point closest to the water will serve as your measurement. In the example, Stake A is 50 feet from the erosion site and Stake B is 20 feet from Stake A. If you do not have this much space that’s okay! You can adapt the distances between the two stakes and the erosion site to your location and you will still be able to record erosional changes over time.



Materials

- 2 reference points –existing markers on the property (e.g., spot on a tree, fence post, corner of deck) or 2 wooden stakes
- Tape measure (be sure it is long enough to cover the distances you will measure)
- Data sheet (included in this guide)



2. Collecting Data

To record changes in the land, you will take two measurements using your measuring tape: (1) between stakes A and B and (2) between Stake A and the erosion site. The distance between Stake A and Stake B will serve as a reference to ensure that you measure from the same place and along the same line each time. The distance between the erosion site and Stake A will change as the shoreline changes and serve as your measure of erosion. Measure once every 1–3 months, as well as before and after storms when it is safe to do so. Increase the frequency of data collection during periods where you observe a lot of change. By taking consistent measurements, you can determine when and how fast erosion is occurring and understand trends (such as increased erosion at a certain time of year) and impacts of specific events (such as storms). The rate of erosion (measured as the change in distance over time) can help future planning to mitigate erosion.

Record your data in a spreadsheet that documents the date, the two distance measurements, and any observations that will help in interpreting your data (such as recent storms). You can find a blank data sheet at the end of this document, or download a digital version on our website.

Additional option - Photos

Photos of the erosion site can serve as additional documentation of change over time. If you do take pictures, it is recommended that you can see both stakes and the erosion site in the same frame (refer to diagram below). If you would like to create a fixed photo monitoring station, details about set up and data collection can be found in *A Guide to Photo Monitoring*.

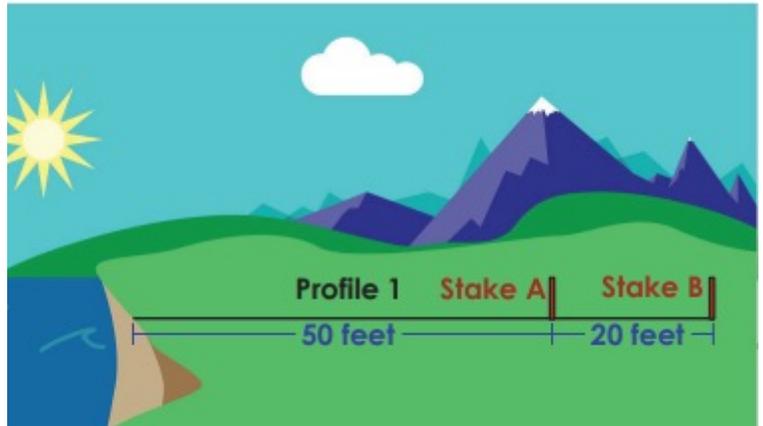


Figure 1

If you have questions about monitoring erosion on your property, please contact Dr. Alyson Eberhardt, Coastal Ecosystems Specialist, at alyson.eberhardt@unh.edu.

This guide was created by Victoria Bamford, NH Sea Grant Doyle Fellow.

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Date	Distance between Stakes (feet)	Distance between Stake A and the Erosion Site (feet)	Photos Taken? (Y/N)	Notes
1/13/21	20.0	50.0	Y	Baseline measurement.
2/14/21	20.0	50.0	Y	No change.
2/22/21	20.0	49.5	Y	Day after a storm.
3/13/21	20.0	49.5	Y	No change.
4/12/21	20.0	49.4	Y	Rainy all last week.
4/17/21	20.0	49.3	Y	Day after high tide flooding.
5/11/21	20.0	49.3	Y	No change.

Example data sheet



