

Waterway Bank Pin Erosion Monitoring Form

State of Wisconsin
 Department of Natural Resources
 PO Box 7921, Madison WI 53707-7921
 dnr.wi.gov

Notice: When reporting bank edge recession measurements this data form is required under ch. NR 328, Wis. Adm. Code. Failure to submit may result in dismissal of your submitted data. Personally identifiable information included on this form will be used to contact you and is not intended to be used for other purposes. It may be made available to requesters under Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.].

Section I: Landowner Information

Name			Contact Person
Mailing Address			Title
City	State	ZIP Code	Telephone Number (include area code)
Email Address			Fax Number

Section II: Contractor Information (if currently known)

Name			Contact Person
Mailing Address			Title
City	State	ZIP Code	Telephone Number (include area code)
Email Address			Fax Number

Section III: Site Information

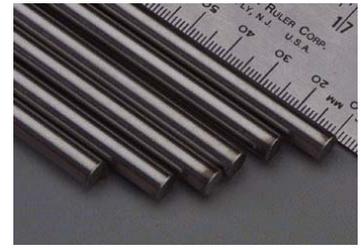
Local Address				Waterway Name	
1/4	1/4	Section	Township	Range E / W	County
			N	<input type="checkbox"/> City <input type="checkbox"/> Town <input type="checkbox"/> Village of _____	
Location Description					

Section IV: Bank Pin Installation Instructions

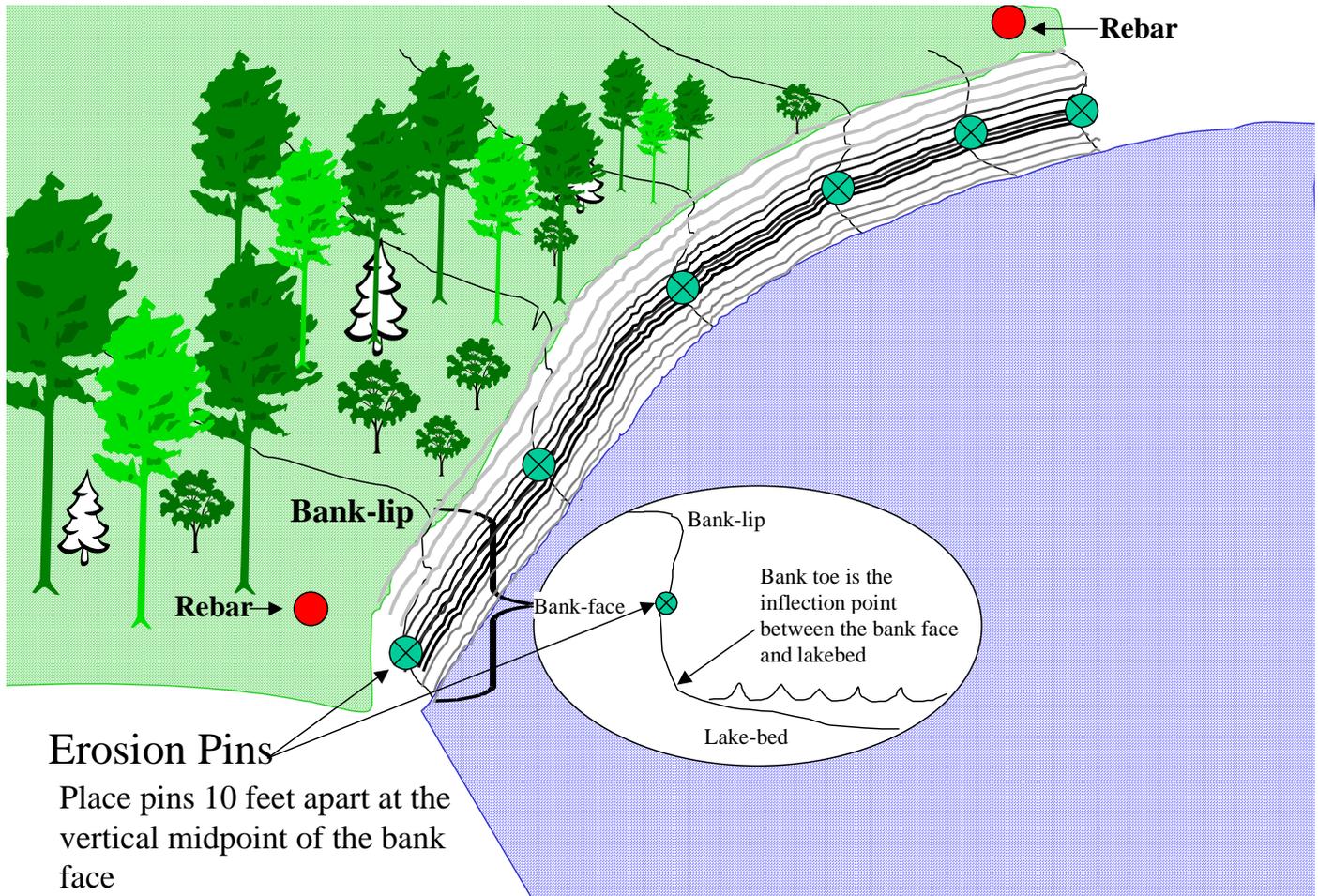
One of the best ways to quantify bank erosion is to measure it directly in the field. Erosion pin monitoring is an established method of assessing bank erosion in which a permanent marker (a "pin") is installed and measurements of the amount of pin exposed are made over time. The erosion pin technique is based on the principle that a pin is inserted into a bank, leaving a known length exposed to provide a benchmark against which subsequent erosion can be measured. Stakes or pins can be driven into banks nearly flush with the surface. The amount of stake or pin exposed due to erosion is the amount of change at the bank between your times of observation. Data recorded at initial installation establishes the baseline condition. Changes due to erosion can then be monitored over time by going back to the study area and re-measuring from your fixed reference points. Bank change may include undetectable change, progressive erosion or deposition, and reversals between erosion and deposition. Erosion pins can be used to monitor bank changes directly with a detection limit of about 0.1 ft/year. When presenting erosion pin results, erosion is always denoted by positive values and deposition by negative values. Applications vary from a dense array of pins at a single bank location to a sparse array at many locations. Here we use the single pins spaced at 10 foot intervals to provide a reconnaissance-level assessment of bank erosion for shorelines typically ranging between 50-200 ft in length. An assumption inherent in the method is that a single pin can represent the change across the entire vertical bank profile, that is, that every point on the bank moves at the same rate.

Reference control points shall be established for the transect by driving 3'-4' rebar (1/2-5/8" diameter) into the soil (flush with the ground surface). Two rebar control points (at the beginning and end of the transect) shall be driven into the soil at each location. These two control points shall be placed 5 feet landward of the bank lip. The rebar ends can be capped or painted to aid in relocating the control points.

The erosion control pins themselves shall be non-corrosive rods 3/16" or 1/4" in diameter by 12" long. Stainless steel rod is preferred. If metals other than stainless steel are used the rods shall be painted with glossy white paint prior to installation. This smooth surface reduces cementation of soil to a rusting rod, which can bias the measurements. Pins shall be horizontally driven into the bank face with approximately 1/4" to 1/2" of the rod left exposed above the soil. Pins shall be placed near the midpoint in the bank profile (see figure below) at 10' intervals. For extremely undercut banks you may need to place pins nearer to the bank lip. You will need make an accurate distance measures using a measuring tape to install and use for relocating pins for subsequent measurements. A metal detector can be used to find buried pins or those obscured by vegetation. Pin identification numbers on the datasheet are always reported for pin orientation from left to right when you are facing the bank. In otherwords, pin #1 is the left most pin when you are facing the bank from the lake. Immediately after initial installation, for each pin, you will record (steel tape or ruler must have a minimum of 1/16" inch scale) the distance of the pin exposed above the soil surface. Once the installation is complete take photographs of the two control points (landward rebar) and a close-up of each control point's adjacent erosion pins. Within a week after installation you must submit your photos, the erosion pin monitoring form, and a copy of your recorded data to your water management specialist. This will allow the Water Management Specialist to verify that your installation was correct and data reported is valid.



You can then use the same form to re-measure the pins at 3-month intervals. Net erosion or deposition on each bank profile is determined by calculating the arithmetic mean of the measured values for each pin for each season of each year. Negative values are included in all of the following calculations. Negative values are caused by deposition. For completely eroded pins, the amount of erosion is assumed to be a maximum of the 12" pin minus the distance exposed during the previous observation. For buried pins, deposition is assumed to have occurred to the end of the formerly exposed pin. This is a minimum estimate of deposition because it is impossible to determine the actual amount without physically disturbing the bank.



Section __ : Certification

I hereby certify that the information contained herein is true and accurate. I am the owner of the riparian property or am the duly authorized representative and may sign this data submission on behalf of the owner(s) of said property. I have read and understand all of the installation and data collection conditions listed in the Instructions. I have designed the monitoring project to comply with these conditions. I understand that failure to comply with any or all of the installation or data collection methods may result in a Departmental determination that the data submission herein is null and void under the provisions of ch. 30, Wis. Stats.

Landowner Printed Name	Telephone Number (include area code)
Landowner Signature	Date Signed

Complete below if permit application was prepared by someone other than the landowner. However, to be valid, the certification above must be signed by the landowner.

Preparer Printed Name	Firm		
Mailing Address	Title		
City	State	ZIP Code	Telephone Number (include area code)
Signature of Preparer			Date Signed

Waterway Bank Pin Erosion Monitoring Datasheet

Attention: Within a week after installation you must submit your photos, the erosion pin monitoring form, and a copy of your initial pin exposure distance data to your water management specialist.

Landowner Name _____

Phone Number _____

Mailing Address _____

Date of Erosion Pin Installation: _____

Total Number of Pins Installed: _____

Recorder Name: _____

Pin #	Date of Initial Measure	Initial Pin Exposure Distance (Nearest 1/16" or mm)	Date of 2 nd Measure	Pin Exposure Distance @ 2 nd measurement (Nearest 1/16" or mm)	Date of 3 rd Measure	Pin Exposure Distance @ 3 rd measurement (Nearest 1/16" or mm)	Net Change over the period (Nearest 1/16")
1 (left most pin when facing the bank)							
2							
3							
4							
5							
6							
7							
8							
8							
10							
11							
12							
13							
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Additional Notes

