

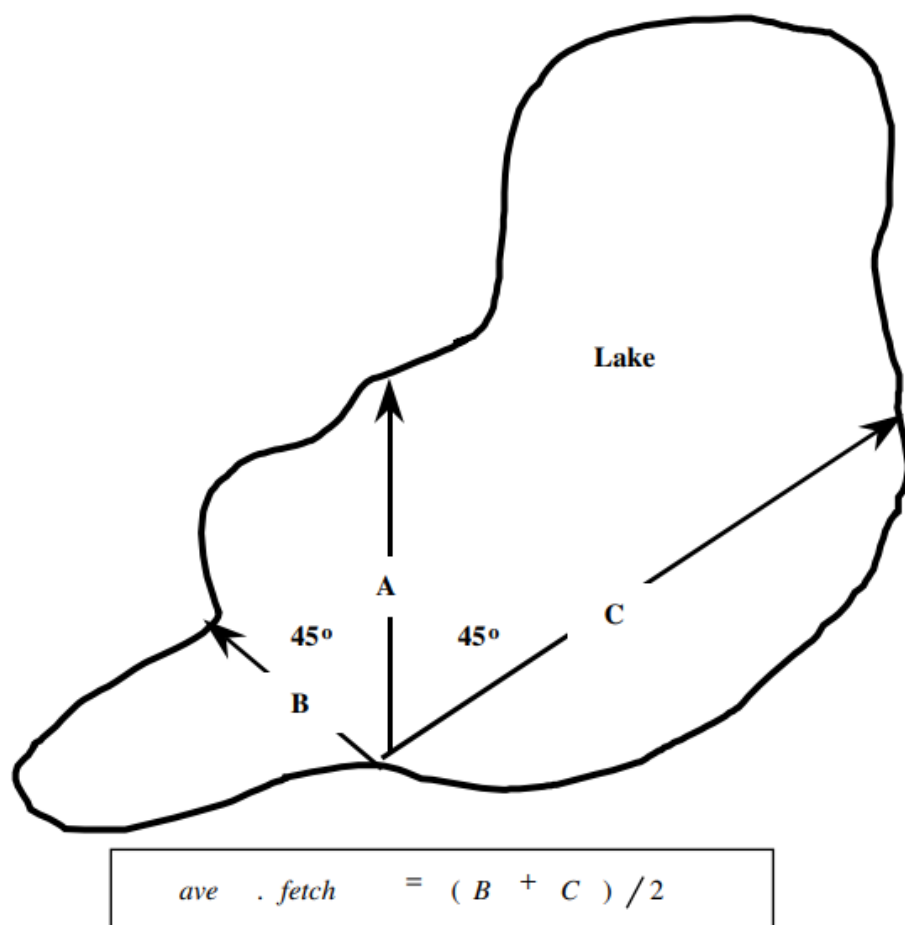
Erosion Intensity (EI) Score Worksheet: for use pursuant to s. NR 320.11, Wis. Adm. Code.

(Adapted from Knutson, P.L., H. H. Allen, and J. W. Webb, 1990. "Guidelines for Vegetative Erosion Control on Wave-Impacted Coastal Dredged Material Sites," "Dredging Operations Technical Support Program Technical Report D-90-13, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS 39180, 35pp.)

SHORELINE VARIABLES	DESCRIPTIVE CATEGORIES							ASSIGNED EI VALUE
	Note: Erosion Intensity value is in parentheses on the bottom of each category box							
AVERAGE FETCH average distance (mi), across the open water to the opposite shore measure 45° other side of perpendicular to the shoreline.	<1/10 (0)	1/10 – 1/3 (2)	1/3 – 1 (4)	1 – 3 (7)	3 – 10 (10)	10 – 30 (13)	>30 (16)	
DEPTH AT 20 FEET depth of water (feet) 20 feet out from shore.	<1 (1)	1 – 3 (2)	3 – 6 (3)		6 – 12 (4)	>12 (5)		
DEPTH AT 100 FEET depth of water (feet) 100 feet out from shore.	<1 (1)	1 – 3 (2)	3 – 6 (3)		6 – 12 (4)	>12 (5)		
BANK HEIGHT height of bank (feet), measure from toe of the bank to top of the bank-lip.	<1 (1)	1 – 5 (2)	5 – 10 (3)		10 – 20 (4)	>20 (5)		
BANK COMPOSITION composition and degree of cementation of the sediments	Rock, marl, tight clay, well cemented sand (dig with a pick) (0)	Soft clay, clayey sand, moderately cemented (easily dug with a knife) (7)			Uncemented sands or peat (easily dug with your hand) (15)			
INFLUENCE OF ADJACENT STRUCTURES likelihood that adjacent structures are causing flank erosion at the site.	No hard armoring on either adjacent property (0)	Hard armoring on one adjacent property (1)	Hard armoring on both adjacent properties (2)		Hard armoring on one adjacent property with measurable recession (3)	Hard armoring on both adjacent properties with measurable recession adjacent to both structures (4)		

<i>AQUATIC VEGETATION</i> type and abundance of vegetation occurring in the water off the shoreline.	rocky substrates unable to support vegetation (0)	dense or abundant emergent, floating, or submerged vegetation (1)	scattered or patchy emergent, floating, or submerged vegetation (4)	lack of emergent, floating, or submerged vegetation (7)	
<i>BANK VEGETATION</i> type and abundance of the vegetation occurring on the bank face and immediately on top of the bank lip.	bank composed of rocky outcropping unable to support vegetation (0)	dense vegetation, upland trees, shrubs, and grasses, including lawns (1)	clumps of vegetation alternating with areas lacking vegetation (4)	lack of vegetation (cleared), crop or agricultural land (7)	
<i>BANK STABILITY</i> the degree to which bank and adjacent area (within 10ft of the bank-lip) is stabilized by natural ground, shrub, and canopy vegetation (outside a 10ft pier access corridor). Human disturbance is typified by tree removal, brushing, mowing, and lawn establishment.	established lawn with few canopy trees (0)	established lawn with moderate to dense canopy trees (1)	moderate to dense natural ground vegetation and canopy trees with shrub layer substantially reduced; or few canopy trees with moderate to dense natural shrub layer. (4)	moderate to dense canopy trees with moderate to dense natural shrub layer; or other natural features preventing establishment of vegetation. (7)	
<i>SHORELINE GEOMETRY</i> general shape of the shoreline at the point of interest plus 200 yds on either side.	Coves or bays (1)		Irregular shoreline or straight shoreline (4)	Headland, point, or island (8)	
<i>SHORE ORIENTATION</i> geographic direction the shoreline faces.	<1/3 mile fetch (0)	North to east to south-southeast (349°–360°, 1°–168°) (1)	South to west-southwest (169°–258°) (4)	West to north-northwest (259°–349°) (8)	
<i>BOAT WAKES</i> proximity to and use of boat channels.	No channels within 100 yds, broad open water body, or constricted shallow water body; or channels within no-wake zones. (1)		Thoroughfare within 100 yds carrying limited traffic, or thoroughfare 100 yds to 0.5 mile offshore carrying intensive traffic. (6)	Thoroughfare within 100 yds carrying intensive traffic (unregulated boating activity) (12)	
EROSION INTENSITY SCORE (EI)					

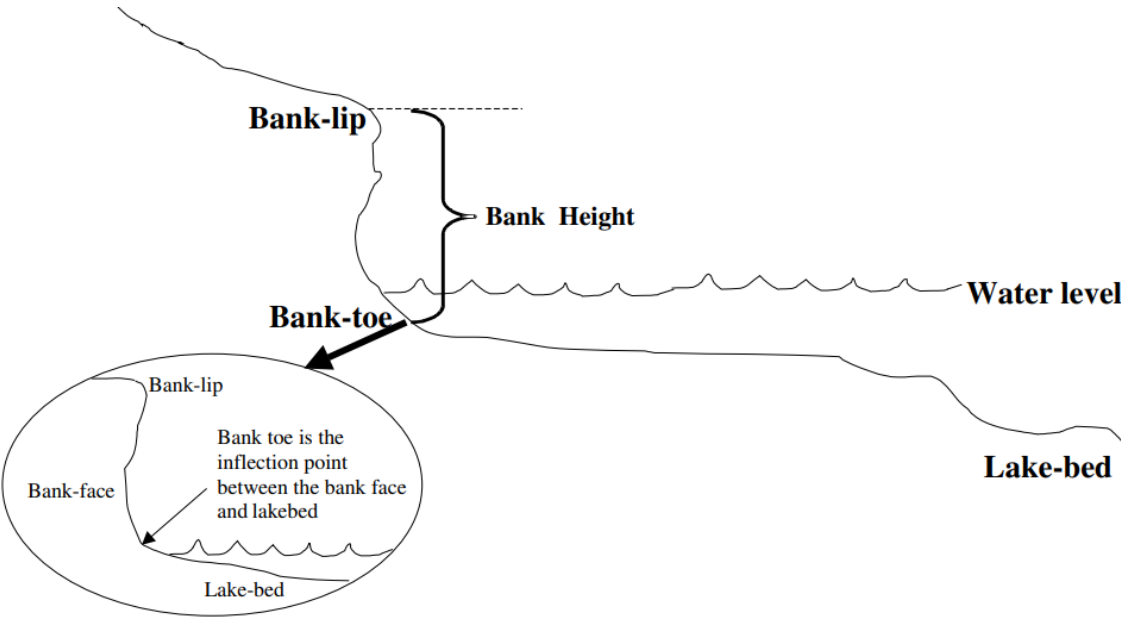
Average fetch: The following diagram describes the calculation of average fetch.



*Aquatic Vegetation: Dense or abundant means that on average 50-100% of the bottom is visually obstructed by plants during the growing season, defined by the dates June 1 through September 15. Scattered or patchy means that on average 1-49% of the bottom is visually obstructed by plants during the growing season, defined by the dates June 1 through September 15. Absent means that on average < 1% of the bottom is visually obstructed by plants during the growing season, defined by the dates June 1 through September 15.

*Boating: A thoroughfare is identified as physical narrowing of the waterbody that by its nature intensifies boating activity near the shore. Thoroughfares which are 250 yards or wider are not scored 12 points, unless the depth contours of the thoroughfare constrict boating activity in close proximity to one shore, and the traffic is intensive. Intensive traffic is defined by a location where at least 50% of the public boating access available must pass through the thoroughfare to reach the open water of the lake, provided the waterway has a total of more than 60 car-trailer units. Limited traffic is defined by a location where at least 30% of the public boating access available must pass through the thoroughfare to reach the open water of the lake, provided the waterway has a total of more than 40 car-trailer units.

Bank Height: The following diagram describes the features of the bank for the purpose of accurately measuring bank height. Bank height is the vertical measurement (feet) from the bank-toe to the top of the bank-lip, irrespective of changes in the water level.



Shoreline Orientation: The following lake map shows an example of accurately determining shoreline orientation.

