Shoreline Intensity (Ei) Score Worksheet

1. Average Fetch[1] (average distance (miles) across the open water to the opposite shore). Measure 45° either side of the line perpendicular to the shoreline.

<1/10 (0 pts) 1/10-1/3 (2 pts) 1/3-1 (4 pts) 1-3 (7 pts) 3-10 (10 pts)
10-30 (13 pts) >30 (16 pts) ..... Points _____

2. Depth At 20 Feet (depth of water (feet) 20 feet from shoreline)

<1 (1 pt) 1-3 (2 pts) 3-6 (3 pts) 6-12 (4 pts) >12 (5 pts) ..... Points _____

3. Depth At 100 Feet (depth of water (feet) 100 feet from shoreline)

<1 (1 pt) 1-3 (2 pts) 3-6 (3 pts) 6-12 (4 pts) >12 (5 pts) ..... Points _____

4. Bank Height[2] (height of bank (feet), measure from toe of the bank to top of the bank-lip)

<1 (1 pt) 1-5 (2 pts) 5-10 (3 pts) 10-20 (4 pts) >20 (5 pts)..... Points _____

5. Bank Composition (composition and degree of cementation of the sediments)

Rock, marl, tight clay, well cemented sand (dig with a pick) (0 pts)
Soft clay, clayey sand, moderately cemented (easily dug with a knife) (7 pts)
Uncemented sands or peat (easily dug with your hand) (15 pts).....Points _____

6. Influence of adjacent structures (likelihood that adjacent structures are causing flank erosion at the site)

No hard armoring on either adjacent property (0 pts)
Hard armoring on adjacent property (1 pt)
Hard armoring on both adjacent properties (2 pts)
Hard armoring on one adjacent property with measureable recessions (3 pts)
Hard armoring on both adjacent properties with measurable recession adjacent to both structures (4 pts)..... Points_____

7. Aquatic Vegetation[3] (type and abundance of vegetation occuring in the water off the shoreline)

Rocky substrates unable to support vegetation (0 pts)
Dense or abundant emergent, floating or submergent vegetation (1 pt)
Scattered or patchy emergent, floating or submergent vegetation (4 pts)
Lack of emergent, floating or submergent vegetation (7 pts) ..... Points_____

8. Bank Vegetation (type and abundance of the vegetation occuring on the bank face and immediately on top of the bank lip)

Bank composed of rocky outcropping unable to support vegetation (0 pts)
Dense vegetation, upland trees, shrubs and grasses, including lawns (1 pt)
Clumping of vegetation alternating with areas lacking vegetation (4 pts)
Lack of vegetation (cleared), crop or agricultural land (7 pts) ..... Points_____

9. Bank Stability (the degree to which the bank and adjacent area (within 10 feet of the bank-lip) is stablized by natural ground, shrub, and canopy vegetation (outside a 10' pier access corridor). Human disturbance is typified by tree removal, brushing mowing and lawn establishment)

Established lawn with few canopy trees (0 pts)
Established lawn with moderate to dense canopy trees (1 pt)
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 pts)
Moderate to dense canopy trees with moderate to dense natural shrub layer; or other natural features
prevents establishment of vegetation (7 pts)..... Points_____

10. Shoreline Geometry (general shape of the shoreline at the point of interest plus 200 yards on either side)

Covers or Bays (1 pt) Irregular shoreline or straight shoreline (4 pts) Headland, point, or island (8 pts)..... Points_____

11. Shoreline Orientation[4] (geographic direction the shoreline faces)

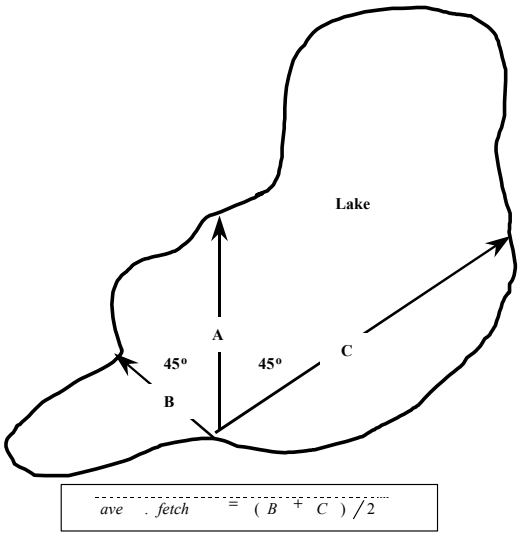
<1/3 mile fetch (0 pts)
North to east to south-southeast (349°-360°, 1°-168°) (1 pt)
South to west-southwest (169°-258°) (4 pts)
West to north-northwest (259°-349°) (8 pts) ..... Points_____

12. Boat Wakes[5] (proximity to and use of boat channels)

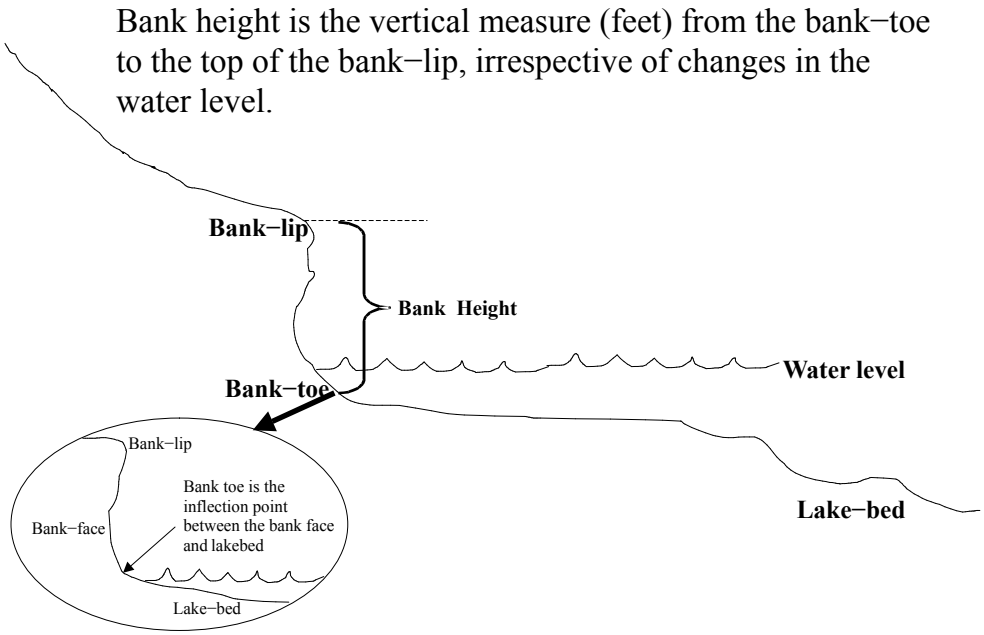
No channels within 100 yards, broad open water body, or constricted shallow water body; or channels within no-wake zones (1 pt)
Thoroughfare within 100 yards carrying limited traffic; or thoroughfare 100 yards to 1/2 mile offshore carrying intensive traffic (6 pts)
Thoroughfare within 100 yards carrying intensive traffic (unregulated boating activity) (12 pts) ..... Points_____

Erosion Intensity Score (Ei) Total Points _____

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

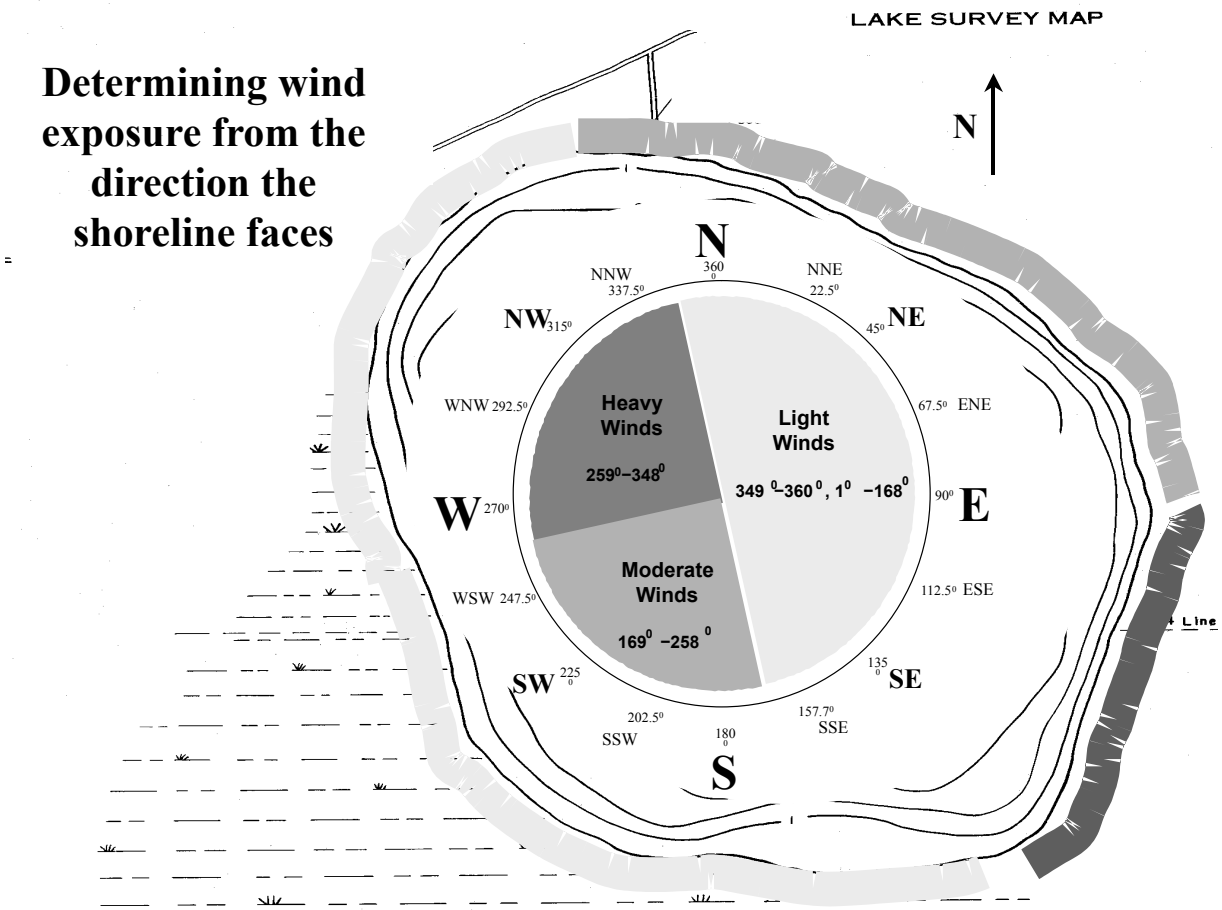


2 Bank height: The following diagram describes the features of the bank for the purpose of accurately measuring bank height



[3] 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.

[4] Shoreline Orientation: The following lake map shows an example of accurately determining shoreline orientation



[5]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 constricts 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.