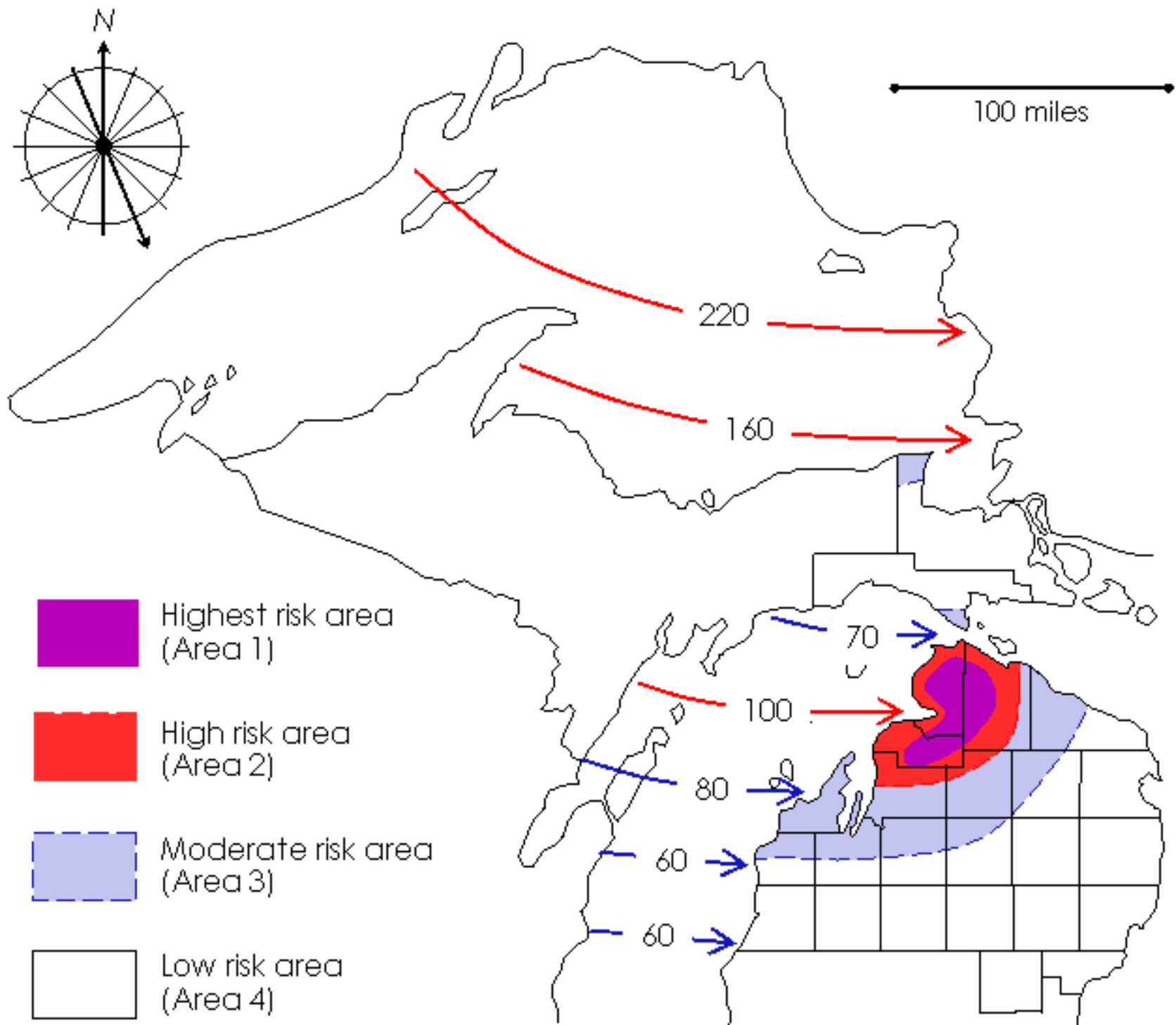


West Flow (260-270-280)

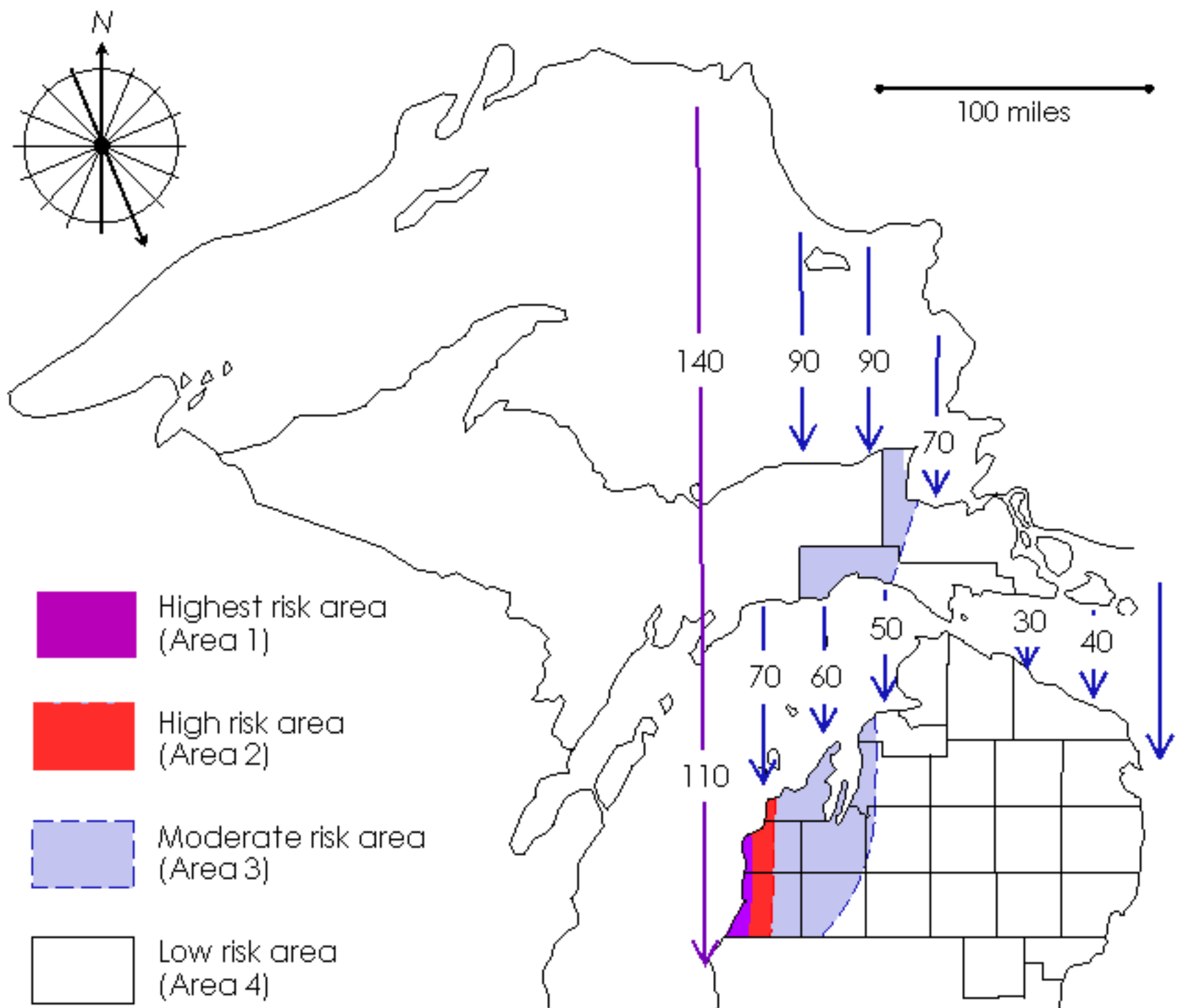


Synoptic Pattern: W Flow regimes can produce heavy snow. The heaviest snowfall off of Lake Superior generally remains north of Chippewa county. Though low level trajectories do not cross Lake Superior, heavy snowfall can still occur across parts of northwest Lower, especially while Green Bay is unfrozen.

Eastern Upper: Far northern Chippewa county near Whitefish Point is most susceptible. In most cases, a land breeze off of Alger and Luce counties will push the most intense bands north of Whitefish Point. Watch for snow bands to clip extreme southern Mackinac county near St. Ignace. In most cases, a land breeze will push these snow bands just south of the Mackinac Bridge.

Northern Lower: Areas around Petoskey, Charlevoix, Ellsworth, Vanderbilt, and Indian River are most susceptible. West winds over Lake Michigan (including Green Bay) are just able to attain a 100 mile fetch into Charlevoix and Emmet counties. The resulting snow bands can push as far east at Presque Isle and Montmorency counties if the winds are strong. A very short Lake Michigan fetch greatly reduces snowfall in the Manistee and Cadillac areas.

North Flow (350-360-010)

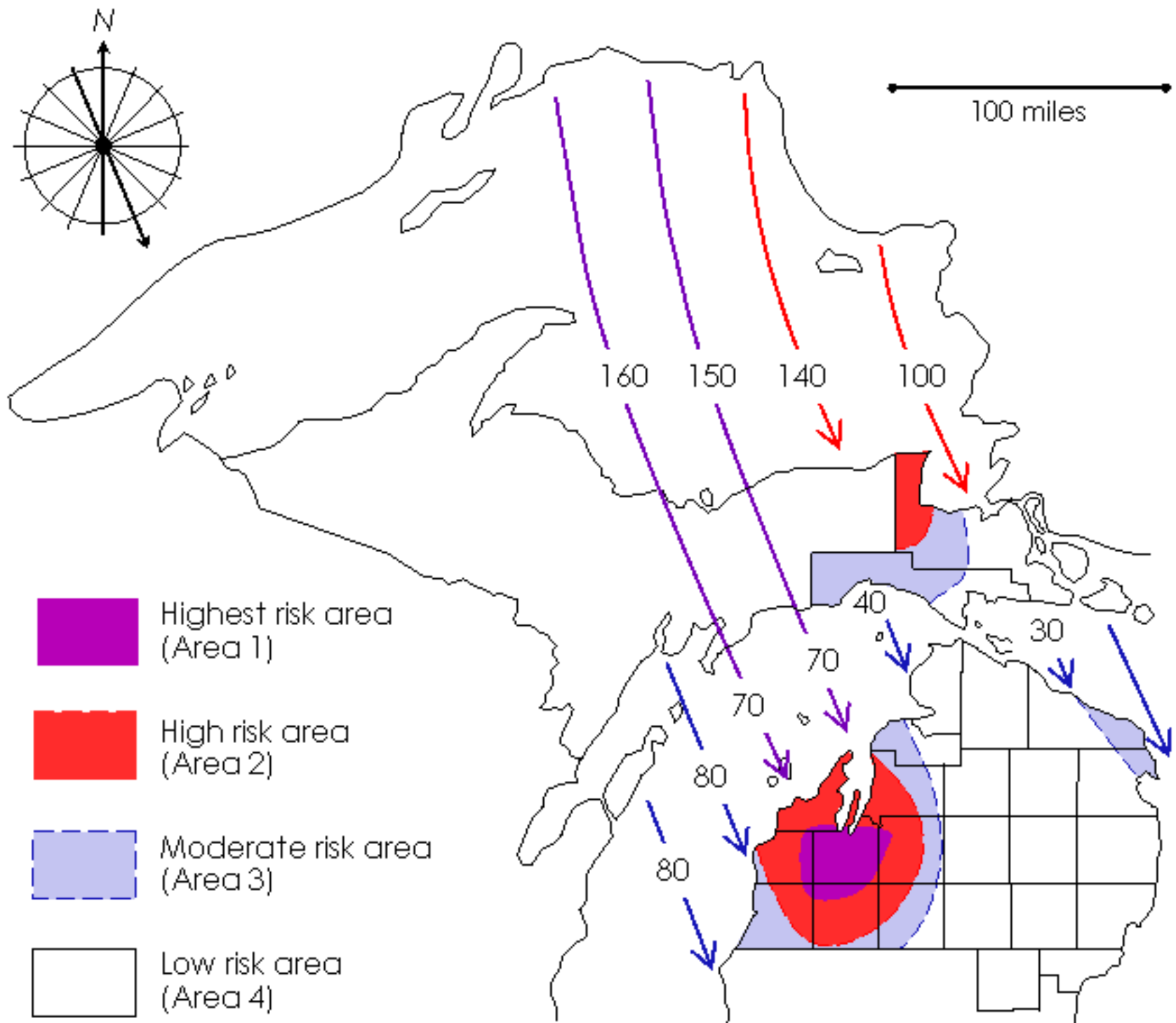


Synoptic Pattern: N Flow situations are frequently associated with neutral and/or increasing anticyclonic surface flow. Consequently, airmasses tend to be relatively dry with lowering inversion heights.

Eastern Upper: Fetches are generally too short for significant snowfall in eastern Upper. The most widespread snow will fall near Whitefish Point, and (if winds are strong enough) over western Mackinac county.

Northern Lower: The most widespread snow will fall near Traverse City, and especially around Frankfort, and Manistee. Though the Lake Michigan fetch into Manistee county approaches 100 miles, a land breeze will often shift the heaviest band just offshore from Manistee (however, a wind that is just W of due N can bring heavy snow to the shoreline). Watch for land breeze convergence (funneling) over Grand Traverse Bay to focus a snow band near Traverse City. Fetches are too short for significant snow over northeast Lower. A land breeze will generally shift the heaviest bands out into Lake Huron offshore from Alpena, Alcona, and Oscoda.

North-Northwest Flow (330-340)

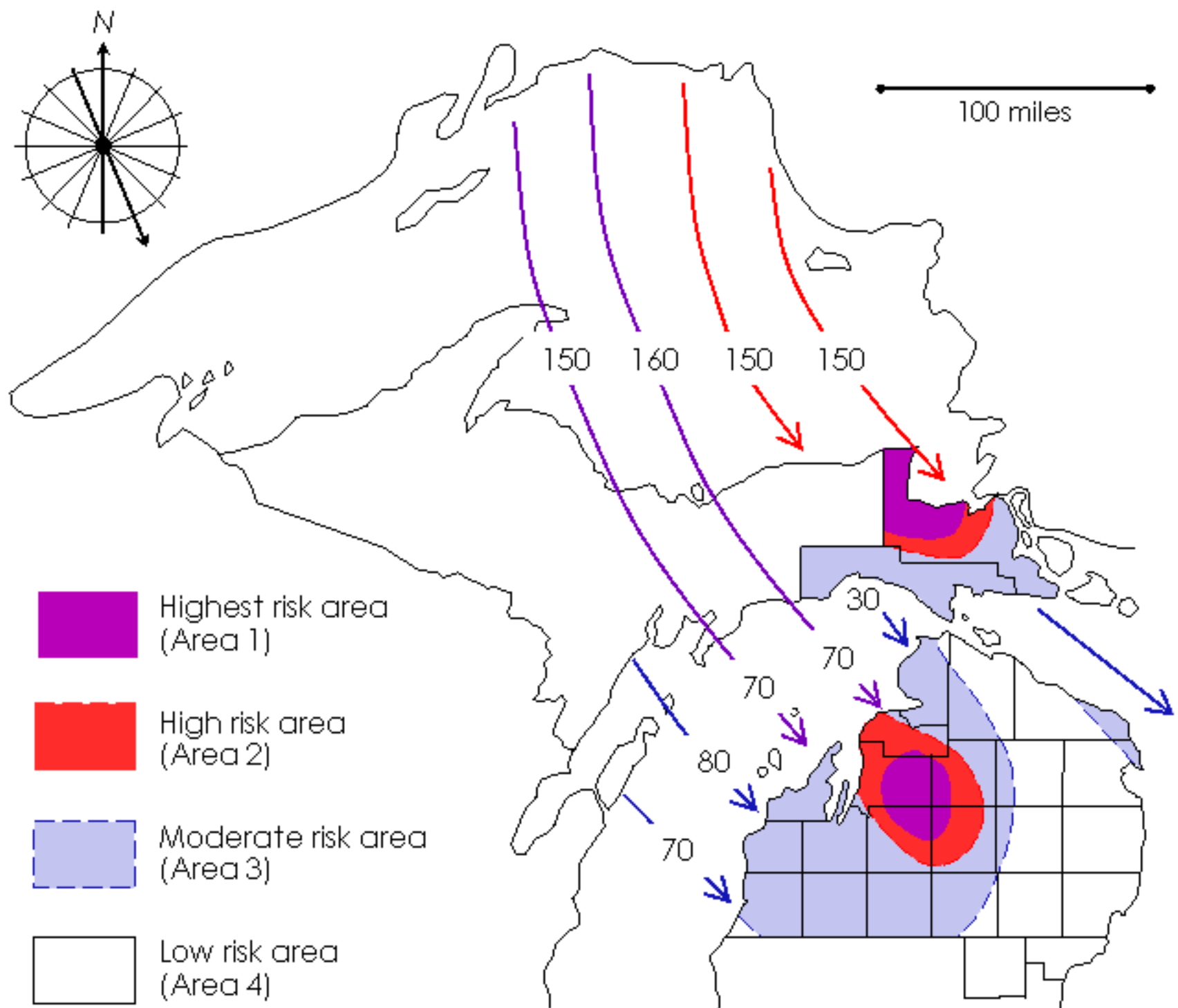


Synoptic Pattern: NNW Flow situations are capable of producing heavy snow. The surface flow is often weakly cyclonic. This often results in long fetches into eastern Upper, and long “effective fetches” from Lake Superior and Lake Michigan into northwest Lower.

Eastern Upper: Western Chippewa county is most susceptible. The most intense banding will generally remain west of Sault Ste. Marie. With strong winds, west and central Mackinac county can also receive heavy snow.

Northern Lower: Areas around Bellaire, Kalkaska, Traverse City, and Cadillac are most susceptible. This is largely due to long “effective fetches” which maximize both Lake Superior and Lake Michigan. The most widespread snow will generally remain west of I-75. Over northeast Lower, watch for a LES band originating over Lake Superior to reform over extreme northern Lake Huron and brush coastal sections of Presque Isle and Alpena counties.

Northwest Flow (310-320)



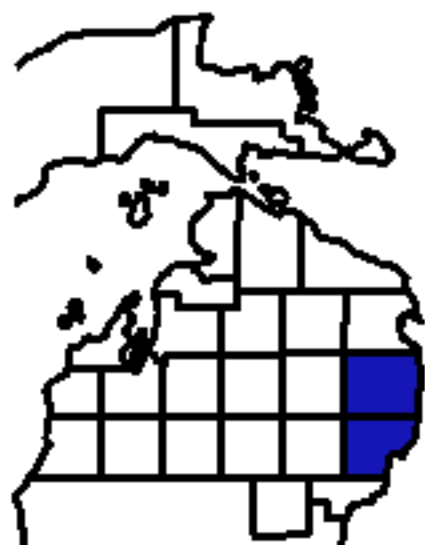
Synoptic Pattern: NW Flow is perhaps the most “classic” of all lake effect snow flow regimes. The surface flow is typically cyclonic, with embedded surface troughs.

Eastern Upper: The west half of Chippewa county is most susceptible. It is often a very close call as to whether heavy snow will extend as far east as Sault Ste Marie. With strong winds, Mackinac county can also receive heavy snow.

Northern Lower: Areas around Charlevoix, Mancelona, Gaylord, Kalkaska, and Grayling are most susceptible. Since low level trajectories into the Traverse City, Manistee, and Cadillac areas don’t extend back into central Lake Superior, snowfall in these areas is often less. Snowfall amounts generally decrease rapidly to the east and south of Otsego and Crawford counties. If winds are strong, the heavy snow can extend into northern Roscommon county. An offshore wind component will generally keep intense LES banding offshore from Presque Isle and Alpena counties.

Synoptic Patterns: Winds from the NNE, NE, through SSW typically do not produce heavy pure LES. The cold air associated with these flow regimes is typically quite shallow, and the low level flow is often anticyclonic (not favorable for heavy LES). It is more common to receive heavy lake enhanced snowfall with the flow regimes below. When this occurs, the counties shaded blue below should be most susceptible (see information on Lake Huron enhanced events).

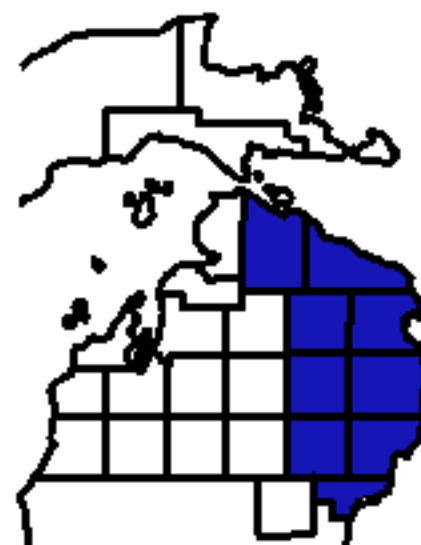
NNE Flow (20-30)



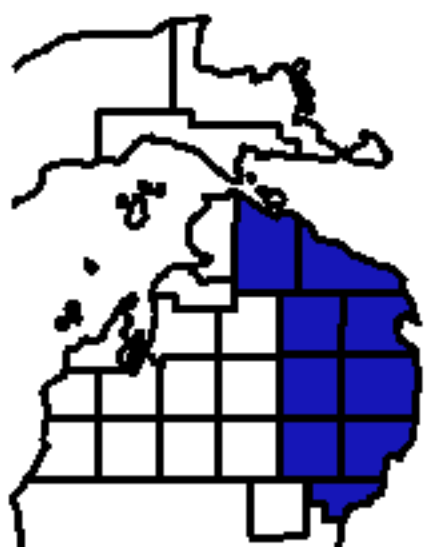
NE Flow (40-50)



ENE Flow (60-70)



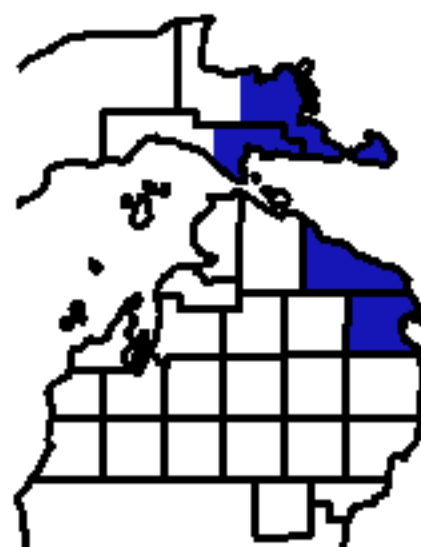
E Flow (80-90-100)



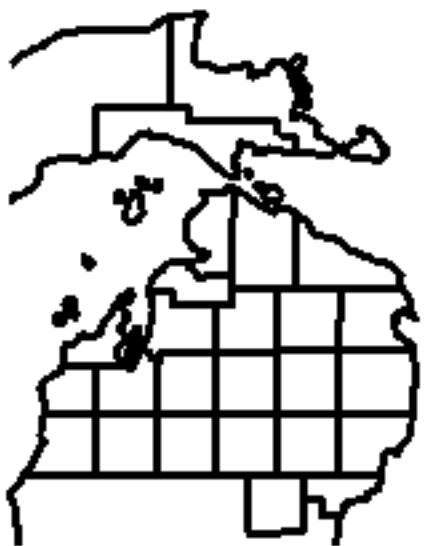
ESE Flow (110-120)



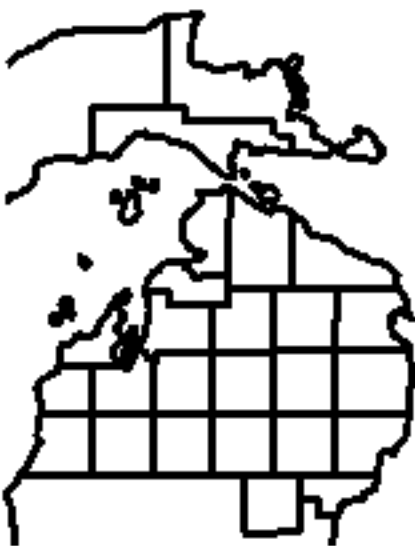
SE Flow (130-140)



SSE Flow (150-160)



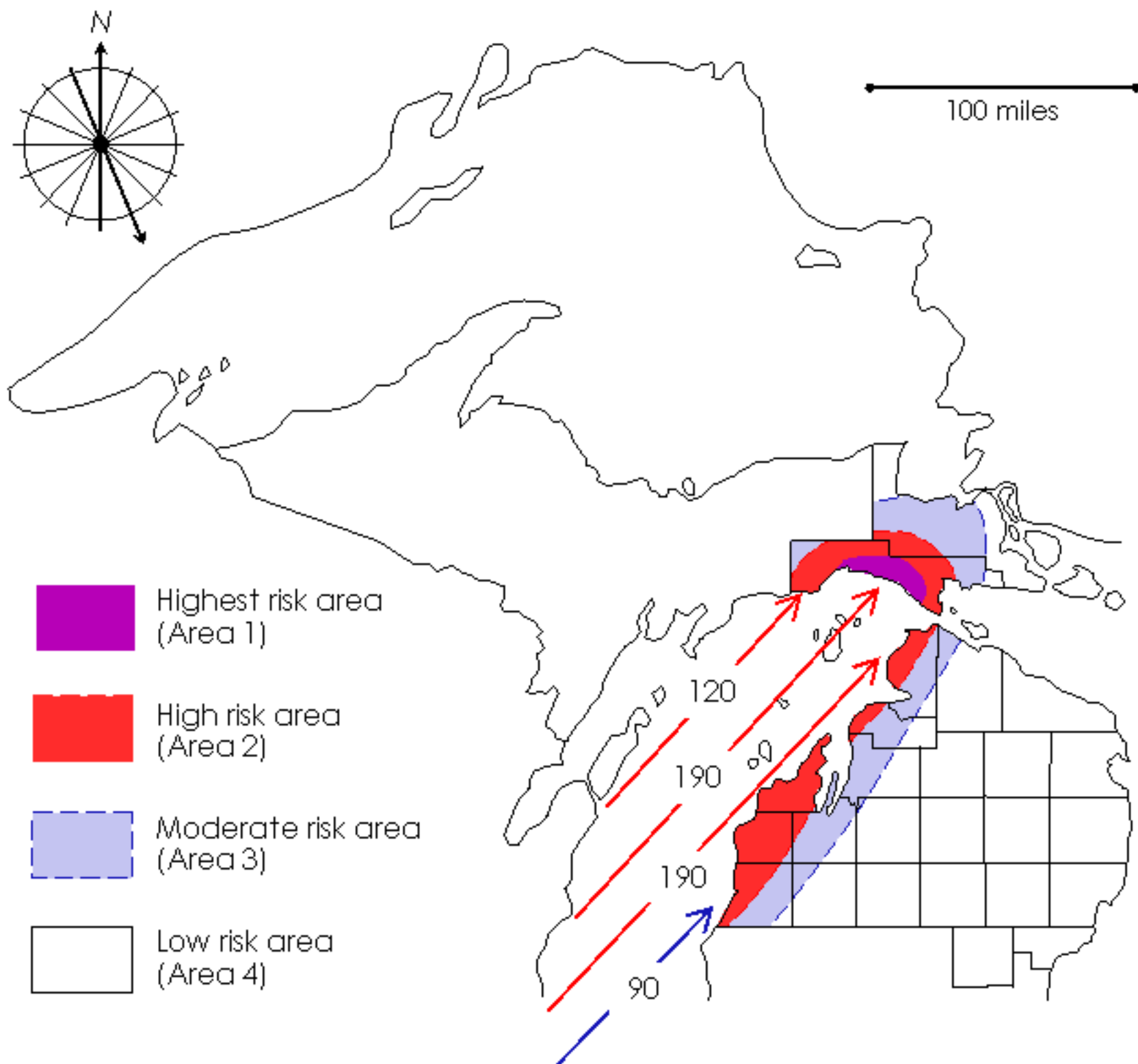
S Flow (170-180-190)



SSW Flow (200-210)



Southwest Flow (220-230)

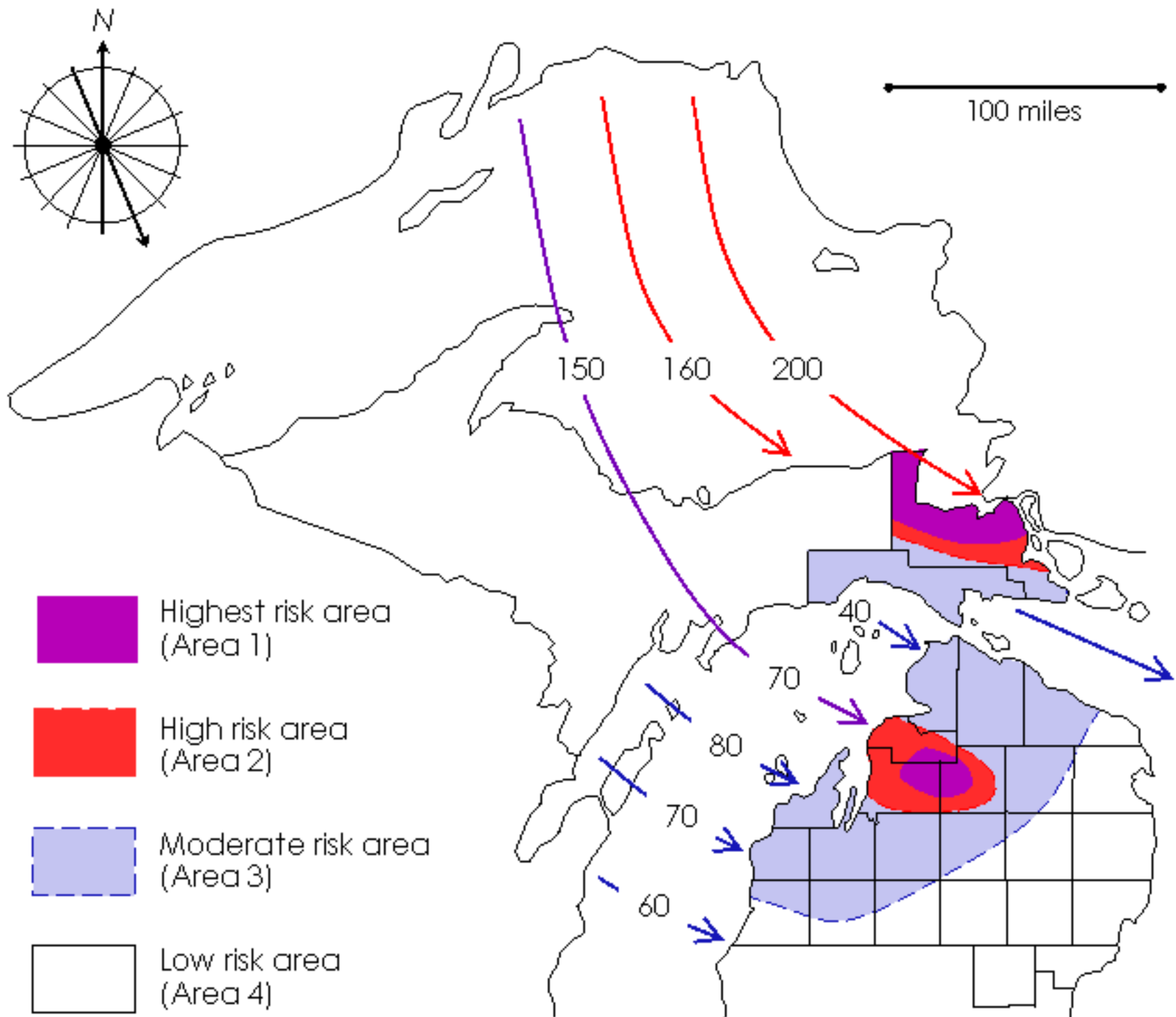


Synoptic Pattern: The SW flow associated with this regime is often the result of backing winds out ahead of a surface trough. Such a trough can help to increase the low-level convergence over Lake Michigan and ultimately lead to snow intensification, especially if mid clouds are present (lake-enhanced snowfall).

Eastern Upper: Mackinac county (mainly west of the Mackinac Bridge) is most susceptible. Fetches are extremely long across northern Lake Michigan. Furthermore, the shoreline orientation of the Straits area favors additional land breeze convergence and snow intensification. This often results in a dominant, intense band into the Naubinway and Brevort area. If winds are strong, heavy snow can also push into Chippewa county.

Northern Lower: Coastal areas of Emmet, Charlevoix, Leelanau, Benzie, and Manistee counties are most susceptible. Note that SW winds over northern Lake Michigan result in fetches of nearly 200 miles! Watch for a land breeze to develop off of northwest Lower. This can lead to a dominant band which nearly parallels the shoreline. In these instances, the heaviest snow often falls in Emmet and/or Mackinac county (and not in Manistee, Benzie, Leelanau, or Charlevoix counties).

West-Northwest Flow (290-300)



Synoptic Pattern: WNW Flow situations are one of the more challenging lake effect snow flow regimes. If the flow persists from this direction, this regime strongly favors heavy snow in eastern Upper. Heavy snowfall in northern Lower is generally a function of whether upstream parcels cross a significant portion of Lake Superior.

Eastern Upper: Chippewa county is most susceptible. WNW winds result in extremely long fetches over Lake Superior. Then, as LES bands approach and move through Whitefish Bay, land breeze convergence results in further intensification. This is the regime that will typically produce the heaviest snow in the city of Sault Ste. Marie. The heavy snow generally remains north of Mackinac county.

Northern Lower: A relatively small area around Charlevoix, Bellaire, and Gaylord is most susceptible. Shorter fetches over Lake Michigan limit snowfall around Traverse City.