

General Information and Terms

General Terms

- Zugunruhe: migratory restlessness
- Staging: large groups of birds gathering before migrating
- Migrant Trap: habitat that concentrates large numbers of migrants

Migration Events

- Morning flight: birds search for ideal habitat at dawn and drop into suitable habitats. Best experienced from dawn for 1-2 hours depending on the migration overnight.
- Reverse migration: when dawn arrives, birds crossing a large body of water (like Lake Erie) will turn around depending on how far they are and head to shore. This results in higher concentrations of birds along lakeshores.
- Fallout: during near perfect conditions (see Weather Conditions and Scenarios) birds will land in concentrated areas, often along lakeshores. Bird diversity and numbers are massive concentrated in lakeshore habitat. Given the exact perfect conditions, once-in-a-lifetime birding is very possible.

Regional Conditions

There's a big difference between a movement of birds locally and a movement across an entire region. If south winds are only present in a small area, less birds will migrate, but when south winds are present throughout an entire region, such as the eastern U.S., essentially every bird in that region migrates, leading to more birds crossing specific areas overnight and ultimately resulting in higher density and variety of birds. Regional conditions are always a factor in the number of birds migrating in a night.

Weather Conditions

During spring, birds generally only move during south winds, as the wind pushes them north. As a result, periods of north winds cause a backup of migratory birds waiting for south winds to migrate. Additionally, cloud cover and wind are major factors in migration.

Low Clouds (below 2000 ft): birds pushed lower and birds are more likely to stop over, especially along lakeshores when birds hesitate and pile up along the lake.

Mid-level Clouds (2-6000 ft): Birds may fly lower but will result in less bird density than low clouds.

High/few Clouds (over 6000 ft): Birds fly higher and less stop over even if migration levels are large. Birds are less concentrated in stopover areas.

Light Wind (5-10 mph): Birds migrate in numbers but are more spread out. Birds are most likely to engage in reverse migration and higher numbers concentrate at lakeshores.

Moderate Wind (10-20 mph): Birds migrate in numbers but are more concentrated and can struggle to land. Just before and after dawn, stronger winds encourage birds to continue crossing lakes instead of turning around in reverse migration, leading to lower levels of birds concentrated and more scattered. If enough birds cross overnight, birding will still be very productive. These winds combined with substantial migration can bring rarities (see Lesser Frigatebird and Least Tern on 5/23/2026).

Light Rain: Migration usually continues and birds fly lower and are more likely to land near dawn.

Moderate Rain: Many birds land earlier than normal, resulting in scattered birds throughout a region. Localized fallout is possible.

Heavy Rain/Storms: Most birds do not take off and ones that are already in flight land. Birds become scattered and localized fallout is possible. ***If rain occurs at dawn*** after a night of strong migration, birds crossing the lake often turn around and others land, leading to strong fallout along lakeshores. This can lead to legendary once-in-a-lifetime fallout with thousands of birds dropping out of the sky on lakeshores if conditions are near perfect.

Rebound Nights

When the wind shifts south after a period of north winds, the backup of migratory birds releases and large numbers move in a single night. These are often the best migration nights when paired with other ideal conditions.

Shorebird Weather

While shorebirds can be seen flying along the lake after high migration, rain and wind pushes more birds towards shore where they may land. Generally the best shorebirds come during or after periods of moderate to heavy rain and wind.

Scenarios

1. Light South Wind and Low Cloud Cover

Many birds will likely migrate, especially if it occurs after a period of north winds. Bird diversity and density will be above average, especially along the lakeshore. Significant morning flight will occur, with birds engaging in reverse migration off the lake and landing in lakefront habitat.

2. Moderate South Wind and Moderate Cloud Cover

More birds may cross a region than if there were light winds. Depending on the wind speed at dawn, morning flight may be suppressed and migrants could scatter. Birds may be less concentrated, even along lakefront habitat. Especially if wind speed decreases prior to dawn, birds will concentrate in lakefront habitats due to reverse migration as normal.

3. Strong South Winds and Cloud Cover

Many birds will likely migrate, and if winds shift across a very large region after a period of north winds, fallout is possible if rain occurs. Due to strong winds, morning flight may be entirely suppressed and birds will be scattered.

4. South Winds and Overnight Rain

Many birds will likely migrate, but will set down during the rain. This will result in scattered pockets of migrants.

5. Moderate to Strong South Wind and Rain at Dawn

This is nearly perfect for fallout, especially if winds shift south after a period of north winds across a very large region (like Eastern U.S.). Due to strong winds, many birds will migrate and depending on the time of spring migration, over 1 million birds may cross a county overnight. Rain at dawn forces birds over the lake to engage in reverse migration in larger numbers than average as well as setting down birds searching for habitat during morning flight. This results in highly concentrated areas of migrants especially along lakeshores. The heavier the rain, the stronger the fallout.