

Watching Swallow Roost Rings on Doppler Radar



In summer, after nesting is over, swallows in North America usually join flocks, often composed of several species. These flocks may number tens or hundreds of thousands of individuals. During the day flock members spread out over wide areas seeking food. Then in the evening the swallows converge again and roost together, usually in stands of cattails or reeds growing in freshwater marshes. The next morning roughly 15 minutes before sunrise the swallows leave the roosts again, mount together high in the sky and then fan rapidly outward. Often, there are so many birds involved that they are recorded on Doppler weather radar screens, where they typically display as circular or semi-circular “roost rings” or “ring echoes.” As the swallows spread farther and farther apart the rings gradually fade, then disappear from the radar displays, but the time from a flock’s lift-off to its radar disappearance may be as much as one hour.

Some other animals (bats, insects, starlings, robins, blackbirds, etc.) form large flocks which can be recorded by radar, but rings produced by swallows can be told because they are much larger, are circular or semicircular, and emerge from marshes or sometimes from cane fields.

As the non-nesting season progresses from summer to autumn and then through winter the species composition of the swallow flocks change and their roost locations also change. Typically, the first rings are seen in July and early August and are produced by Purple Martins staging in the southern US prior to their migration to South America. Then, from mid-August into September rings formed by mixed flocks of smaller swallows (Barn, Bank, Cliff and especially Tree Swallows) are common in the northeast, the Great Lakes states, Ohio Valley and upper Mississippi Valley. By late September most of the long-distance migrant swallows (Barn, Bank, and Cliff) have departed and roost rings, now mostly composed of Tree Swallows, are centered along the coasts of the mid-Atlantic states and in the Mississippi valley. As you’d expect, the positions of the flocks continue to gradually shift south so by October the Tree Swallows are forming roost rings in South Carolina, Georgia and Louisiana. Eventually, by late October and November the ring-making Tree Swallow flocks are concentrated primarily in Florida, where they will remain in huge flocks that may exceed one million birds. Tree Swallows that survive will remain here until they depart for their northern breeding grounds in March and April.

Thanks to the **United States National Weather Service** you can follow this fascinating seasonal progression of swallow roost rings online. Here's how.

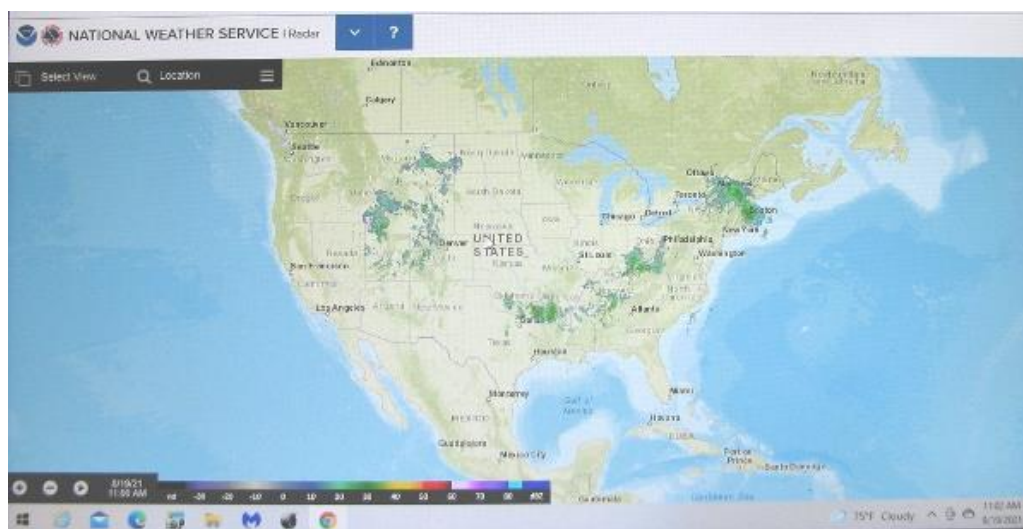
1. Type **weather.gov** in your search bar. The **National Weather Service Home page** will appear.



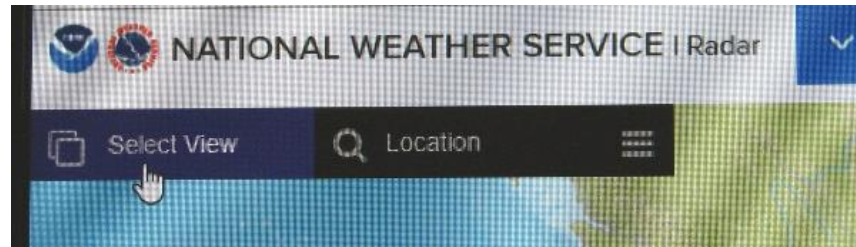
2. Point to **Radar**. A **Drop-down Menu** will appear. Select **Enhanced Radar**.



A map of the lower 48 US states will appear.

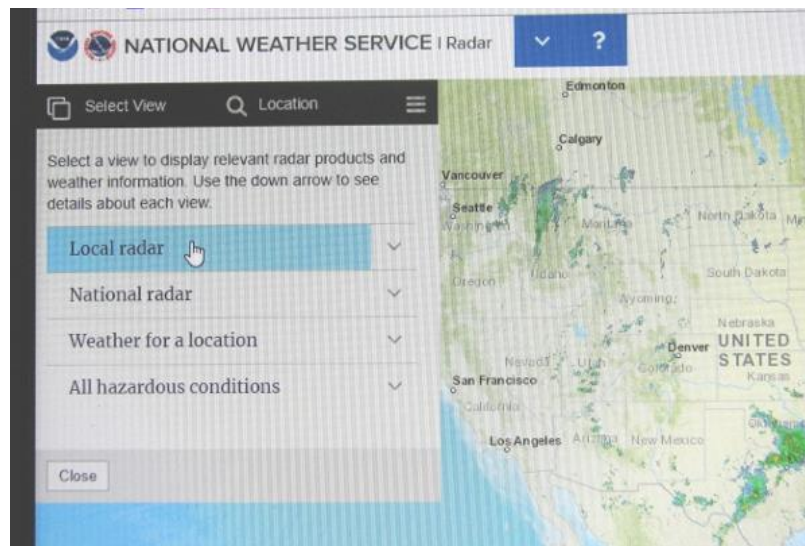


3. In upper left corner find and press **Select View**.

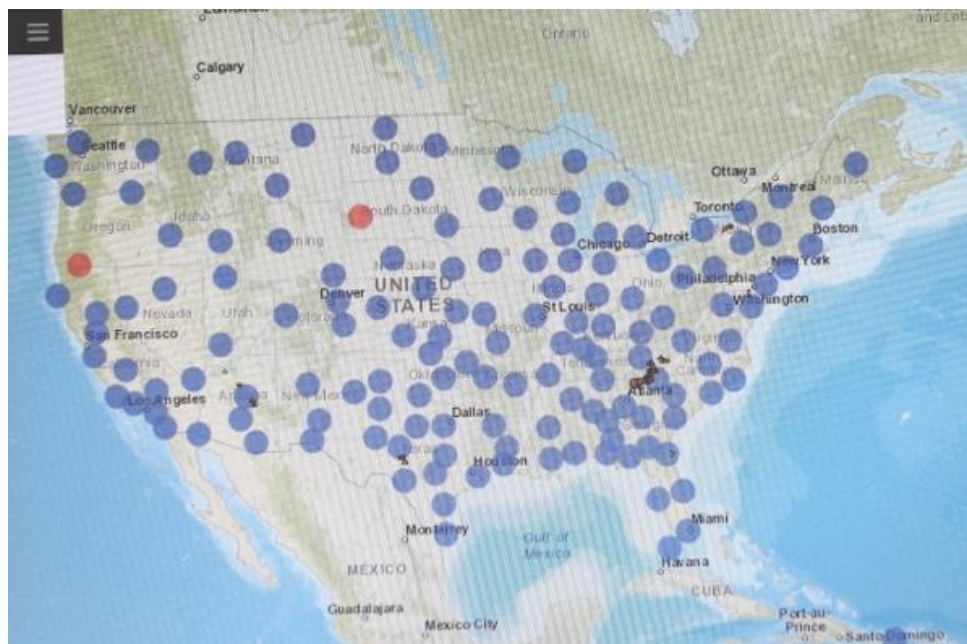


A **Drop-down Menu** will appear. You can use either Local or National radar to find and view swallow roost rings. We suggest using **Local Radar**.

4. Select **Local Radar**.

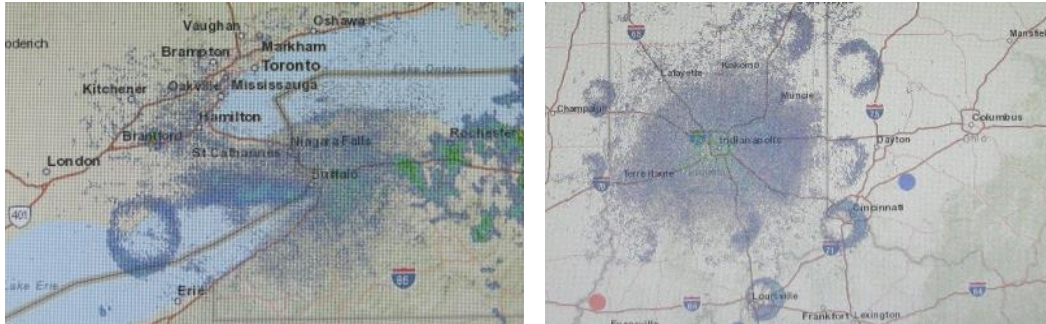


A map showing **all the local National Weather Service radar station locations** will appear.



You can select and view any station's radar, but remember, **swallow radar rings only display for a limited time early in the morning at any station**. Also remember, **roost locations change from month to month**. You may need to try several stations before finding rings.

5. Select a radar station that you think may be displaying the time **between 15 minutes before sunrise and 45 minutes after sunrise**, when swallows are leaving roosts. The **Super Resolution Base Reflectivity** for that station will display. Depending on the location of the station and the time relative to sunrise you may find zero, one, a few or even many roost rings displayed.



6. A control at the bottom left lets you **play loops** that show **swallow rings expanding**.

