

## Abstract

Severe weather is a recurring threat to life and property across much of the United States every year. The most destructive of these weather types, and usually the most feared, is the tornado. When tornado warnings are issued people are told to take shelter, or at least that is the goal. However, with the vast majority of tornado warnings issued not actually correlating with a tornado occurring, some are starting to ignore these vital safety messages. Additionally, multiple tornadoes every year go without warnings, or warnings that came too late.

This study looks at ten years of data, from 2004 to 2013, for the National Weather Service Weather Forecast Offices in Lincoln, Illinois, Indianapolis, Indiana, and Wilmington, Ohio. The goal of this study is to provide an analysis of how each of these offices does in terms of issuing tornado warnings that verify with a tornado, as well as how many tornadoes occurred without a tornado warning. A geospatial and temporal analysis was done using data for tornado paths and tornado warnings for the above National Weather Service offices. This analysis revealed that on average roughly 20% of tornado warnings issued will verify and that more than 30% of tornadoes will not receive any kind of warning, though these tornadoes are almost always on the weak end of the EF scale. Using this data, a conclusion is drawn that the most effective means of helping the public is a better effort in communication and outreach about tornadoes and tornado warnings by the National Weather Service.

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