

Abe, M., H. Fudeyasu, and M. Sasaoka, 2025: Historical review of research activities toward typhoons/hurricanes modification in Japan and the United States. *J. Meteor. Soc. Japan*, **103**, doi:10.2151/jmsj.2025-015.

Plain Language Summary: This study summarizes discussions on typhoons or hurricanes modification in Japan and the United States (US) from the 1940s to the present, based on a survey of past literature and interviews with relevant personnel. The US government conducted field experiments against hurricanes five times in the Atlantic in 1947-1971, and proposed field experiments against typhoons in western North Pacific to the Japanese government in 1965. Eventually, it was concluded in 1975 that no experiments would be conducted in western North Pacific due to opposition from Japanese and Chinese governments. This paper explains the factors behind the termination of the field experiments and the decline of weather modification research in Japan from that period onward.

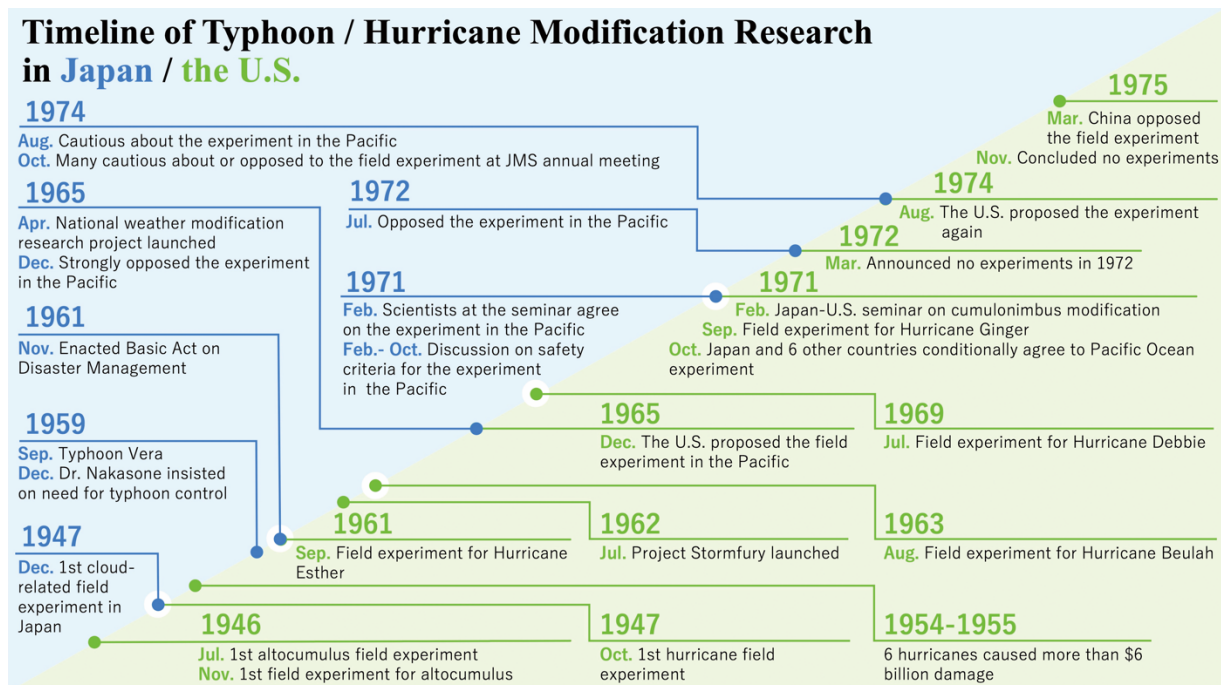


Figure 1. Trends related to typhoon and hurricane modification research in Japan (blue) and the United States (green) in the second half of the 20th century.

- In the 1980s, two scientific discoveries—the absence of supercooled water droplets and the observed reformation of the eyewall in non-seeding hurricanes—led to the rejection of the Stormfury hypothesis, resulting in the termination of field experiments.
- After Typhoon Vera (1959), the Japanese government acknowledged the need for typhoon modification research but ultimately opposed the experiments due to scientific and social concerns, especially the inability to set satisfactory criteria to ensure safety on land during the experiments.
- Research on weather modification, including typhoon hurricane modification, became active in Japan during the 1960s but declined rapidly after 1971. Six factors were identified as contributing to this decline.