

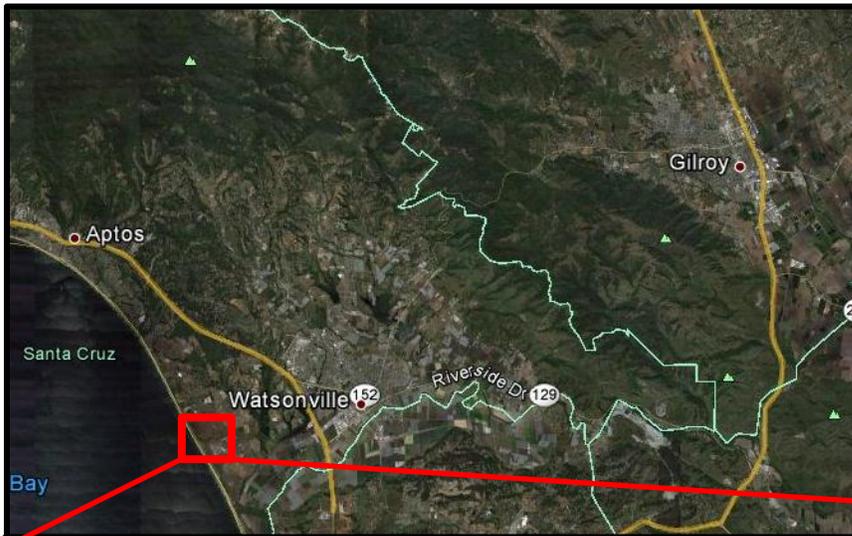


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December 22, 2012 EF-0 Watsonville Tornado

At 7:00 AM PST on the morning of December 22, 2012 a weak waterspout/tornado moved inland from Monterey Bay into coastal Santa Cruz County near the town of Watsonville. Damage survey results conclude the damage to be consistent with a tornado of EF-0 intensity, produced by winds estimated at 75 MPH. Damage consisted of tree damage, and moderate to significant damage to several commercial greenhouses on a large farm about a quarter of a mile inland from Monterey Bay. From a combination

of radar data, damage survey assessment and witness statements, it is concluded that the tornado took an intermittent path of 1.07 miles with a width of 20 yds.



Rating	EF-0 (est. 75 MPH)
Begin	6:59 AM 36.8876 N 121.8327 W
End	7:02 AM 36.8971 N 121.8186 W
Path Length	1.07 miles (intermittent)
Path Width	20 yards



Description of points on path map:

- A) **Tree damage** reported by employees of farm – consisting of some trees uprooted, damaged, branches broken in small wooded area between farm and beach area. It is believed the tornado originated as a waterspout over Monterey Bay and came onshore at the beach and moved through the wooded area on its way inland.
- B) **Significant Greenhouse Damage**: Damage to commercial greenhouse structure. Fiberglass panels and plastic sheeting from structures were cracked and broken and thrown for several dozen yards around the site. Metal pole support structure of the greenhouse was collapsed, with some poles bent. Crops inside of greenhouse suffered damage from falling structure debris.



Damage to greenhouse structure at commercial farm showing collapsed metal structure and fiberglass/plastic sheeting damage.

Image from NWS storm damage survey.



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Point B (Continued)



Significant damage to greenhouse structure on commercial farm at point B on map. Images from NWS Damage Survey.





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C) **Minor Greenhouse Damage:** Additional damage to adjacent greenhouses was noted. Damage was less severe and was limited to panels and sheeting. Structural damage to poles not noted here.



Images from NWS Storm Damage Survey.





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D) **Debris in Fields**: At these two locations in the adjacent field, debris was noted spread out across the ground at distances of up to approximately 30-50 yards from the greenhouse damage. Debris consisted of fiberglass and plastic sheeting from greenhouses. The debris was located south of the damage path.



Though difficult to see in this image, there was fiberglass and plastic debris in the field, south of the damage path through the greenhouses. Debris looks like white spots in the muddy field in this picture. Image from NWS Damage Survey.



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E) **Power pole wrapped with debris**- Immediately following the incident, employees of the farm noted that the power pole at this location was wrapped with debris, which was some agricultural cloth related to greenhouse operations. By the time of the damage survey this was no longer there. The pole is south of the damage path.



Power pole was wrapped with debris. Image below shows type of debris that was around pole but was down by the time of the picture. Images from NWS Damage Survey.





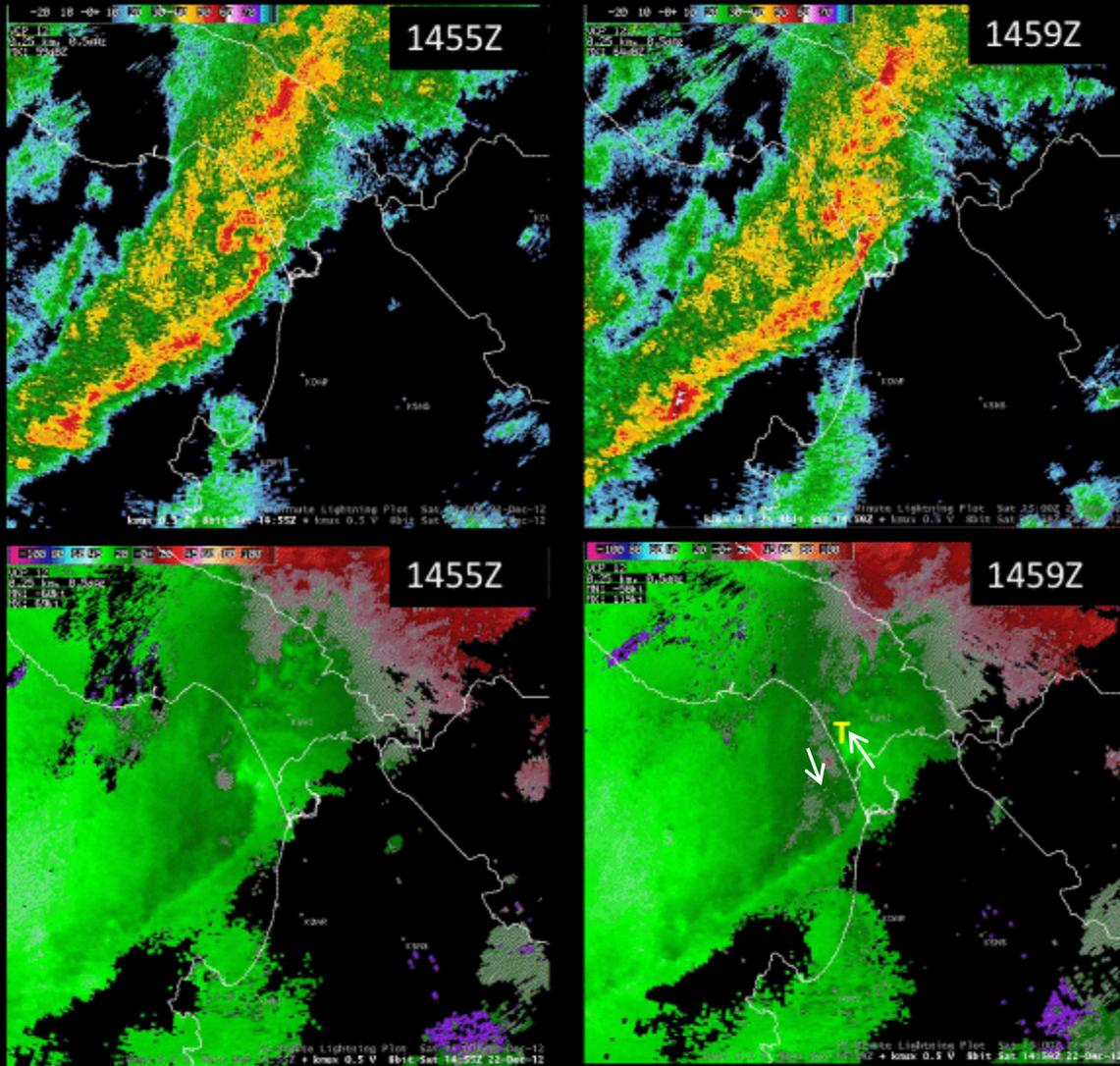
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F) Damage was noted to several trees down near San Andreas road. There was anecdotal evidence that there may have been some additional minor damage in the fields across the road from this commercial farm, but the damage was cleaned up before the damage survey was conducted. The tornado path is ended at the site of the final observed damage, approximately 1.07 miles from the start of the damage path.



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December 22 2012 Watsonville Tornado: KMUX base Z and V



Images above compiled by Science and Operations Officer – NWS San Francisco Bay area. These images show the KMUX radar data at the time of the tornado, between 6:55 and 6:59 AM on December 22, 2012. Top images show reflectivity observed (intensity and location of rainfall) and bottom images indicate velocity of winds observed from KMUX with the Yellow T marking the position of the tornado at 6:59 AM on December 22, 2012. Arrows were added to illustrate the wind direction present in the tornadic circulation. The top left image of the comma head looking structure is indicative of a storm that could potentially produce waterspouts/tornadoes. A Special Marine Warning was in effect beginning at 6:03 AM for Monterey Bay to highlight the threat from dangerous thunderstorms over the Bay.