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The impact of the 2011 Tōhoku-oki tsunami in the Sendai area: interpretations of time series satellite images and videos.

D. Tappin
British Geological Survey, Marine Geology, Nottingham, United Kingdom (drta@bgs.ac.uk)

The Tohoku-oki tsunami of March 11th 2011 was the most devastating tsunami to strike Japan in recorded history. Approximately 20,000 people died and 100's of square kms of the coast were inundated. Runup heights (local tsunami height above sea level) were at a maximum of 40 m along the northern Honshu coast. Farther south, on the Sendai coastal plain, tsunami runup heights were lower, with a maximum of 20 m recorded. The tsunami inundated up to 5 km inland across the Sendai Plain, which remained partly flooded for several weeks after the event. For the first time after a major natural disaster, post-event satellite imagery of the affected areas was immediately released. Numerous helicopter videos were also acquired. This contribution presents on pre- and post-tsunami satellite time-series data and video imagery to show the impact of the tsunami along a 15 km stretch of coastline of the Sendai Plain between Yuriagi and Iwanuma. The video and satellite data, in association with other data from tide gauges, ocean buoys, survivor observations and fieldwork, are used to identify the tsunami inundation path, tsunami timing, inundation limits and impact on the coastal areas.