



# Drones in emergency response

CRJ Key Network Partner **PIX4D** has written previously about the benefits of using drones in emergency response. Here, the photogrammetry and mapping software expert describes a use case that proves just how useful drones can be

**C**anadian NGO GlobalMedic works in emergency humanitarian aid, with specialised skills in disaster response. It has completed 236 responses across almost 80 countries, providing water, food, flood assistance, medical care, shelter and drone rescue services. As an expert in the industry, it considers the tools it uses carefully – using the wrong equipment can cost money, time and slow down life-saving operations – and it deploys in high-pressure situations.

Hurricane Dorian struck the Bahamas in September 2019, blasting the island chain as a Category 5, slow-moving storm. At the time, it was the second strongest Atlantic hurricane on record; wind speeds were fast enough to flip cars and damage buildings, with a storm surge between five and seven metres (18 to 23 feet). GlobalMedic went to Grand Bahama to provide food and water filters. It then connected with the Grand Bahama Port Authority GIS Analyst, Amit Seeram and a local GIS specialist, Renardo Karageorgiou. Together they started mapping the hurricane damage with a FLIR Systems SkyRanger R70 drone and PIX4Dreact.

The drone team helped save the local authorities' time by assisting the damage assessment. The government wanted teams to do 'windshield assessments', where they would get into a car and drive through affected areas. The drone was an ideal alternative, as it could gain situational awareness and the map could be rapidly processed and shared with local officials in minutes. The team began data collection at 08:00hrs every day, heading to different regions of Grand Bahama as

directed by the local officials. This collaboration with the government meant there was a clear objective of where to collect data and what to focus on – in this case, damage assessment. They spent extra time surveying the Grand Bahama Waterway, a canal that cuts through a central part of the island. The storm surge had damaged the canal and, since many people lived along its banks, checking the impact of the hurricane was critical.

## Intense pace

Despite the intense pace it worked at, the team flew every day for more than two weeks, save one day owing to poor weather. The gathered data was stitched in PIX4Dreact, which uses fast-mapping to provide 2D maps in minutes, offline. This is ideal for emergency response where internet access is not guaranteed and getting results can be time-sensitive, especially in rescue missions.

The team then compared the data collected with PIX4Dreact with satellite imagery from before the storm to assess the damage. This provided local authorities and humanitarian groups with a perspective of just how much had changed.

Overall, GlobalMedic provided valuable information to be used for recovery and in assessing the damage after the disaster. Drone mapping saved the government huge amounts of time, owing to it being faster and better suited to access areas with blocked roads.

Drone mapping was an efficient, actionable resource that made a difference in the emergency.

■ See [pix4d.com](http://pix4d.com) for more details

Image courtesy of GlobalMedic, FLIR Systems and the Grand Bahama Port Authority

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