

Increased risks of grounding in Barranquilla, Colombia

Background

Gard and other P&I clubs have recently experienced several serious casualties in the port of Barranquilla. The port of Barranquilla is located on the west bank of the *Rio Magdalena* (Magdalena River) some 10 miles upriver from the mouth, known as *Bocas de Ceniza*, in the Caribbean Sea. The port receives some 300 vessels monthly. The purpose of this circular is to inform about the situation in Barranquilla and to help members and clients to assess the increased risk when entering or leaving this port.

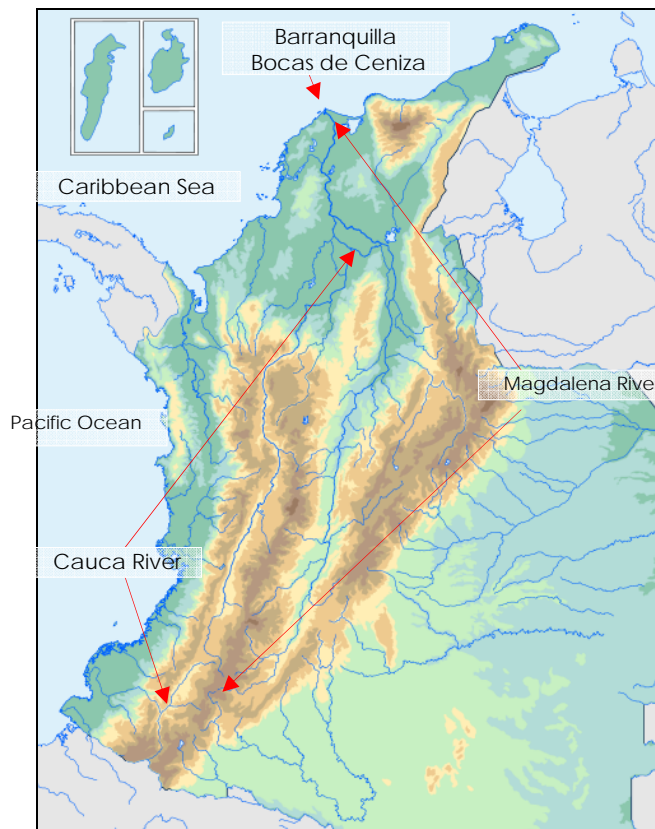


Figure 1- Magdalena River & Rio Cauca reaches the sea in Barranquilla

The unusual situation in Barranquilla

The 2010 rainy season in Colombia, with unusually large volumes of rain falling for considerable periods of time has been the worst in 40 years. The rainiest months of the year are usually April and October, but in 2010 due to the *La Niña*¹ phenomenon, the late rainy season started in late August and is now running into December. Colombian climate experts estimate that the rains will continue well into 2011, probably until March, causing the late rainy season of 2010 to merge with the early rainy season of 2011. At the time of writing, this year's rains have so far left more than 130 people dead and close to two million affected.

There are currently unusually large volumes of water in the rivers, and special *directional dams* at *Bocas de Ceniza* have been constructed to accelerate the flow of the river to maintain and improve depth and thus the draught for the shipping channel. This has created unprecedented conditions and increased the risks involved in navigating in the port of Barranquilla.

¹ La Niña is a coupled ocean-atmosphere phenomenon that is the counterpart of El Niño as part of the broader El Niño-Southern Oscillation climate pattern.

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Increased risk when navigating in the port of Barranquilla

The severe conditions described have caused difficulties for even the most experienced pilots in Barranquilla and some of the incidents, including three serious groundings in October/November may be due in part to misjudgement of the river conditions by the pilots and masters. Examples of this could be “presenting too much hull” to the current and turning at the wrong time. In addition to the groundings, the excess water flow has also led to other incidents such as collisions due to miscalculating the speed and strength of the current.

With the increasing volume of water, the silting up of the river bed and of the mouth of the river has also increased, causing changes in the pattern of silt deposits, creating shoals and reductions of depth where there previously were none. The changes in the river bed also have a bearing on the speed and direction of the current. The current in the navigational channel has increased due to the Bernoulli principle². This has changed the hydrodynamics of the River.

The authorities have expressed concerned and have increased the frequency of bathymetries and soundings of the river bed. They have also started to provide information more regularly (bi- or tri-monthly, rather than once a month). In addition, a permanent dredge is now stationed at *Bocas de Ceniza* to cope with the changing circumstances.

Recommendations

Due to the unusual conditions in Barranquilla, Gard strongly recommends Masters to be aware of the risks involved and take the above into consideration when planning the arrival or departure. Vessels entering the port should request their agents to provide the most up to date bathymetric charts and recommendations from the local authorities prior to entering port. When possible, vessels should enter the port during daytime.

When possible the pilot should board the vessel three or more miles outside the river mouth. This will allow the pilot more time to get a better feel of the handling of the ship, should there be an emergency situation. Masters should work closely with the pilots in the discussion and planning of the entering manoeuvre. The pilot station should be contacted well in advance to obtain an update on the conditions in order to get accurate data for the onboard risk assessment. The Master and the pilot should plan together to reduce the vessel's side exposure to the current to avoid losing rudder control of the ship.

The circular has been drafted and edited by Gard's local correspondent in Colombia – Marventura Services Ltda.

² If the volume increases and the area to discharge remains the same, the same volume is delivered but at a higher speed.

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