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A tributary canyon system, shallow gas accumulations and an unnamed mud volcano at Bosphorus outlet in Black Sea.

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The controversy about the origin of the reconnection of the Black Sea and Mediterranean Seas after the Glacial maximum and following sea level rise increased scientific interest during the last decade. Recent studies assume that a rapid flooding event could have occurred in the Black Sea during the Holocene. A survey was carried out at Bosphorus outlet in Black Sea in August 2002 on board R/V Le Suriot.This survey provided bathymetric data using EM 300 multibeam echosounder and Chirp Sonar data. The purpose was the investigation of the effects of Bosphorus strait, changes in fresh water supply and neotectonic factors on sediments depending on relative sea-level changes. Acousting imaging allowed to identify continental shelf incision and continuation of the Bosphorus strait to the Black Sea. A tributary canyon system was revealed. Two or more recent canyon heads can be traced landward on the shelf which are trending in W-E direction. Slumping is evident on canyon walls. Chirp sonar profiles demonstrate paleo channels on the shelf area. In the northwestern part of the study area profiles show some interesting features which exist only on the western shelf at 100 m water depths and on some canyon crests. First 6m of the piston core, that was taken from the northwestern part of the same canyon area during Assemblage survey on board R/V Marion Dufrense was totally defomed by gas existence. Besides, gas and fluid-related features observed on the shelf. Also TTR 15 cruise in June provided 5.1 kHz Sub Bottom Profiler data and 9.5 kHz Long Range Sonar data (Okean) acquired at northwestern toe of the canyon system of the previous study. An unnamed new mud volcano was discovered. And for the first time at Bosphorus outlet gas hydrates were recovered in the cores. High backscattering lineaments indicate the

canyon axes which are the continuation of the canyon system in the previous study. Also mud brachia recovered in the cores indicate that the feature is a mud volcano.