MARIE-THARP LECTURE SERIES
FOR OCEAN RESEARCH | **NO.20**

GEOMAR

Katherine Richardson

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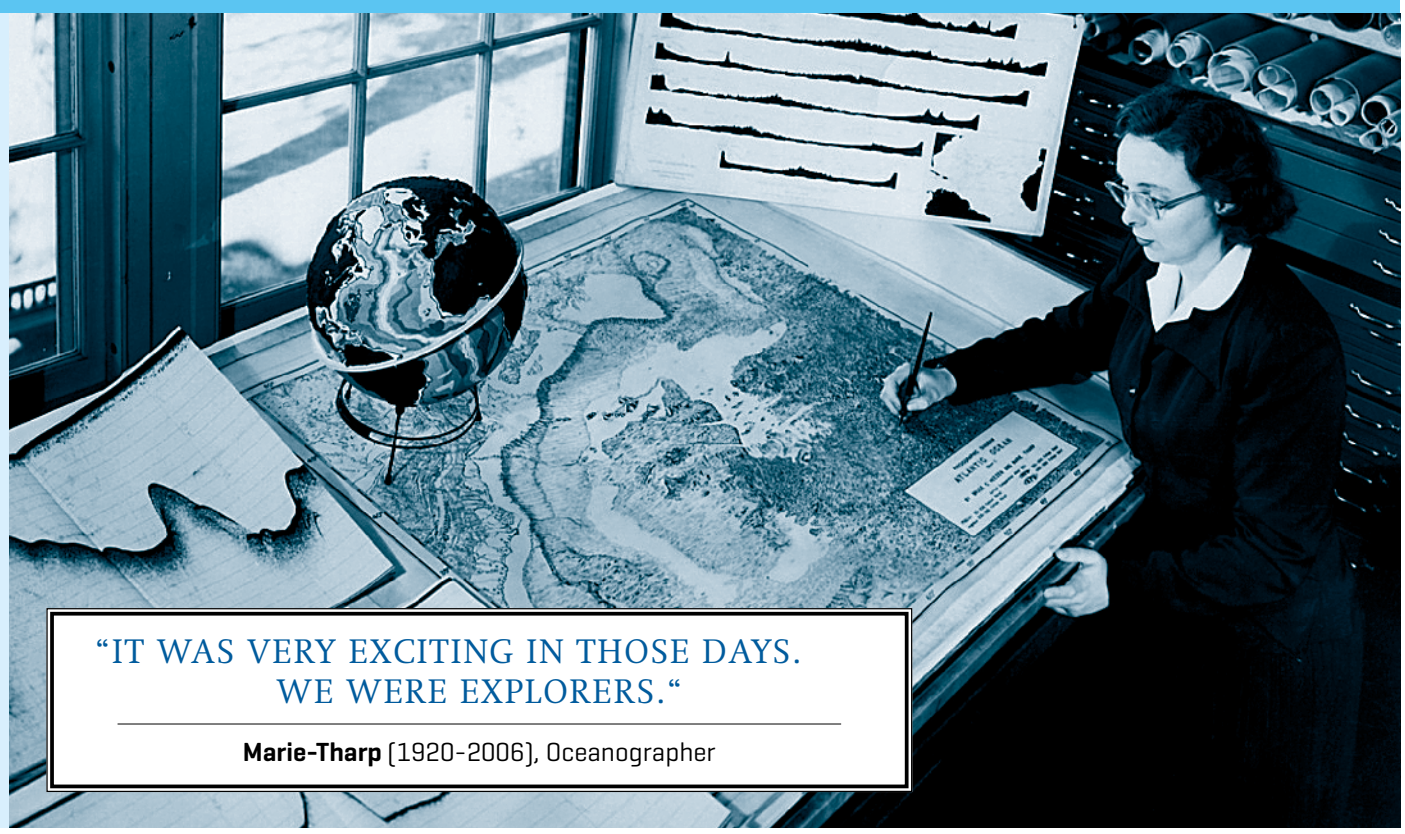

"IT WAS VERY EXCITING IN THOSE DAYS.
WE WERE EXPLORERS."

Marie-Tharp (1920-2006), Oceanographer

Thursday, 21st September 2017, 11:00 a.m. (11:00h)

GEOMAR Lecture Hall West (R.54) | Düsternbrooker Weg 20, 24105 Kiel

Predicting the Influence of Climate Change on Global Ocean Primary Production

Since the 1970s, global primary production (PP) estimates have been made based on remotely (satellite) sensed optical characteristics of the surface ocean. The algorithms used acknowledge that not all PP takes place in the surface layer but the corrections used to include sub-surface PP in the total are based on statistical analyses of historical data that do not necessarily remain valid in an ocean impacted by climate change.

In the studies presented here, macroecological patterns regarding phytoplankton photosynthesis throughout the water column are used to develop a more eco-physiological approach to estimating global PP. Two important conclusions emerge from this new approach: (1) The common (IPCC and others) assumption that changes in thermal stratification resulting from ocean warming will lead to a reduction in PP is likely not valid at least for large portions of the global ocean and (2) oligotrophic regions of the ocean are likely more productive than commonly assumed.

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