The talk highlights the capabilities of coherent-on-receive marine radar (CMR) systems - such as the one developed by the Radar Hydrography group at Helmholtz-Zentrum Hereon - for capturing and tracking individual ocean wave breaking events. Unlike traditional marine radar, CMR can measure Doppler velocities in addition to backscattered power, enabling the estimation of key geophysical parameters like wave breaking strength and occurrence frequency (among others). These measurements offer valuable insights for studying nearshore dynamics, whitecap statistics, and air-sea interaction processes. Two recent case studies will be presented: (1) measurements of roller energy and dissipation from a shore-based radar at Duck, North Carolina, as part of the During Nearshore Event Experiment (DUNEX), and (2) vessel-based radar observations of breaking wave statistics and CO_2 gas exchange during the Ocean-Atmosphere component of the Elucidating the Role of Cloud-Circulation Coupling in Climate (EUREC^{4}A) project