The 11 March 2011 Mw 9.0 Tohoku megathrust earthquake off the coast of Japan generated a major tsunami that inundated a large area on the northeast coast of Honshu, resulting in widespread devastation, over 13,000 deaths, and more than 14,000 missing. An international team of scientists from Japan, Australia, USA, Poland, UK and Indonesia, undertook a post-tsunami survey in May 2011 that focused on the area close to the Sendai megacity and airport, and preliminary findings are presented.

We adopted a ‘grid approach’ for our survey, sampling along transects established on a grid extending 5 km inland and 1-2 km wide north of Sendai airport. The sampling sites were chosen in an area where video footages were available, in order to assess the effects of the tsunami waves on sediment thickness and characteristics. One aim of the survey was to collect sedimentary data for inverse modelling. We collected tsunami water level data and other information important for sediment transport modelling, including sediment thickness, grain size and sedimentary structures. The effects of liquefaction, which is a distinctive feature in the Sendai plain, were assessed. Samples were also collected for microfossil, geochemical, heavy mineral, meso- and micromorphological analysis, as well as anisotropic magnetic susceptibility. Data will also be used to carry out an environmental assessment of the effects of the tsunami. In addition to characterising the relations between the 11 March 2011 tsunami and deposits, we attempt to draw analogies with the 869 Jogan and older tsunami deposits.