Figure F1. Bathymetric and track chart, Site U1450. Projection is UTM Zone 45N. Multibeam bathymetry was acquired during R/V *Sonne* Cruises SO125 and SO188. Blue line = seismic Line SO125-GeoB97-027 with common depth point annotation. Contour interval is 20 m. Portions of seismic data in the vicinity are shown in Figures **F2** (red line; 22 km) and **F3** (14 km).

Figure F2. Seismic Line SO125-GeoB97-027 across Site U1450, showing upper portion of sedimentary section.

Figure F3. Seismic Line SO125-GeoB97-027 across Site U1450, showing complete sedimentary section cored. A 0.5 s AGC algorithm was applied to equalize amplitudes throughout the seismic section. Total depth = 811 m DSF.

Figure F4. Lithostratigraphic summary, Hole U1450A. For legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). For a larger version of this figure, see LITHOSTRAT in **Supplementary material**. (Continued on next page.

Figure F4 (continued).

Figure F5. Lithostratigraphic summary, Hole U1450B. For legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a).

Figure F6. Representative examples of major lithologies recovered in Hole U1450A. A. Volcanic ash (1H-2, 5–37 cm). B. Succession of mud turbidites (1H-5, 1–33 cm). C. Silt/fine-sand dominated turbidites (42F-1, 22–54 cm). D. Homogeneous fine sand (40F-1, 77–109 cm). E. Nannofossil-rich calcareous clay (120X-3, 64–96 cm). F. Centimeter-sized clasts of light gray nannofossil-rich calcareous clay in a matrix of clay (117F-1, 49–81 cm).

Figure F7. Representative smear slide images (parallel nicols), Hole U1450A. A. Volcanic ash with abundant glass shards (1H-2; 1.600 m CSF-A). B. Silty sand including quartz, feldspar, and various kinds of mica and heavy minerals (22H-2; 106.500 m CSF-A). C. Clay minerals (2H-1, 9.020 m CSF-A). D. Nannofossil-rich calcareous clay (76F-1; 360.920 m CSF-A).

Figure F8. Hole U1450A features. A. Laminated silt overlain by structureless clay (2H-2A, 79–99 cm). B. Bioturbation in thin mud turbidites (32F-1A, 12–32 cm). C. Two successive sand turbidites, boundary at 8 cm (28F-1A, 1–22 cm). Note fining-upward texture (normal grading) in the uppermost part of the lower unit and horizontal stratification in the basal part of the upper unit.

Figure F9. Plant fragments, Hole U1450A. A. Occurrence of plant fragments in basal part of sand turbidites marked by white ovals (4F-1, 91–104 cm). B. Microscope photograph of plant fragment. C. Microscope photograph of sand grains from the basal part of the sand turbidites, showing abundant plant fragments.

Figure F10. Representative smear slide images, Hole U1450B. A. Silty sand (7R-2; 658.83 m CSF-A; parallel nicols). B. Nannofossil-rich calcareous clay (11R-1; 695.75 m CSF-A; crossed nicols). C. Clay with nannofossils (11R-3; 698.49 m CSF-A; parallel nicols). D. Silt (22R-1; 802.41 m CSF-A; parallel nicols).

Figure F11. Representative examples of major lithologies recovered in Hole U1450B. A. Gray silty clay with silt laminae (9R-1, 65–97 cm). B. Bioturbated calcareous claystone with nannofossils (11R-1, 15–47 cm). C. Parallel laminated silty clay and parallel laminated interbeds of silt (12R-2, 59–91 cm). D. Siltstone with organic fragments and mud clasts (21R-1, 24–56 cm). E. Normally graded siltstone with organic fragments (22R-1, 10–42 cm).

Figure F12. Maximum grain size, Hole U1450A.

Figure F13. Maximum grain size, Hole U1450B.

Figure F14. Ethylene glycol–treated X-ray diffractograms of oriented clay aggregates. Yellow ovals = sample locations.

Figure F15. Semiquantitative clay mineral proportions, Site U1450.

Figure F16. NRM of archive section halves and discrete samples before and after 20 mT AF demagnetization, Hole U1450A. Light gray dots = before demagnetization. Dark gray circles = intervals that do not meet quality criteria (see **Paleomagnetism** in the Expedition 354 methods chapter [France-Lanord et al., 2016a]). Blue dots = calcareous clay, black dots = other lithology. Inclination and declination: dark green dots = principal component directions from discrete samples. Inclination: gray lines either side of 0° = expected inclinations from GAD. Declination: yellow = oriented cores. Declinations are in a geographic reference frame only where orientation data are available. Intensity: intensity of magnetization before and after demagnetization. Light green dots = before demagnetization, dark green dots = after demagnetization. Magnetic susceptibility (MS) = point measurements on archive section halves.

Figure F17. AF demagnetization diagrams (Kirschvink, 1980) of three discrete samples, Cores 354-U1450A-1H through 62F. Points = projected endpoints of remanent magnetization vector measured for each sample in core coordinates (azimuth not oriented). Samples selected in similar lithologies present similar behavior downhole. A, B. Typical demagnetizations indicating positive or negative inclinations. Two samples were selected in two different lithologies in the most recent core. The ChRM of (A) the sample from a hemipelagic sequence has a positive inclination; (B) the sample from a turbidite sequence has a negative inclination. C. Sample affected by GRM or ARM during AF demagnetization, mainly after a 40 mT peak field.

Figure F18. Polarity interpretation, Core 354-U1451A-36F. Circles = measurements that do not pass quality control criteria. Blue dots = calcareous clay, black dots = other lithology, green dots = measurements on discrete samples. Declination is rotated and illustrates magnetostratigraphic interpretation. A single vertical axis rotation was applied to the entire core so that points interpreted as normal polarity plot near the 0° line. Intensity = intensity of magnetization after 20 mT AF demagnetization. Magnetic susceptibility (MS) = point measurements on archive section halves. Polarity: black = normal, white = reversed, gray = uncertain. Geomagnetic polarity timescale (GPTS) of Gradstein et al. (2012).

Figure F19. Variations of salinity, bromide, sulfate, phosphate, alkalinity, magnesium, calcium, sodium, potassium, and silicon concentrations in interstitial waters, Site U1450.

Figure F20. TIC content expressed as $CaCO_3$, Holes U1450A and U1450B. Pelagic and hemipelagic deposits correspond to calcareous clay and calcareous claystone in the lithostratigraphy. Note that these lithologies do not have carbonate content systematically >15%.

Figure F21. TOC contents, Holes U1450A and U1450B.

Figure F22. Relationship between TOC content and Al/Si ratio of sediments, Holes U1450A and U1450B.

Figure F23. Al/Si vs. Fe/Si, Site U1450 and Hole U1449A.

Figure F24. Zr vs. Sc, showing geochemical effects of sorting within the heavy mineral fraction, Site U1450.

Figure F25. Physical property measurements, Hole U1450A.

Figure F26. Moisture and density results, Hole U1450A.

Figure F27. Color reflectance data, Hole U1450A.

Figure F28. Physical property comparison of Toba Ash 1 (75.0 ± 0.9 ka, according to Mark et al., 2014) in Sections 354-U1449A-1H and 354-U1450A-1H. Parameters are scaled equally for both sites and display on the same depth scale. Red = pixel-based red color component from the Section Half Imaging Logger (SHIL). Note that all sensors depict volcanic ash in two distinct layers.

Figure F29. Downhole logs from Hole U1450B compared to equivalent laboratory physical property measurements and lithostratigraphy from Hole U1450A. Downhole logs are on the logging depth scale (WSF), whereas MAD, PWC, lithology, and core recovery data are on the core depth scale (CSF-A). There are small depths shifts between the two depth scales, usually <2 m in amplitude.

Figure F30. APCT-3 temperature-time series with extrapolated formation temperature estimates, Hole U1450A.

Figure F31. Heat flow calculations, Hole U1450A. A. Sediment temperatures. B. Thermal conductivity data from Hole U1450A (circles and dashed line) with calculated thermal resistance (solid line). C. Bullard plot of heat flow calculated from a linear fit of the temperature data.

Figure F32. Seismic Line SO125-GeoB97-027, upper 350 ms TWT of cored interval, Site U1450. Seismically identified units/features: L = levee, IS = interlevee, C = channel/fill, F = high-amplitude channel fill. For lithologic legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). For a larger version of this figure, see STRATSYNTH in **Supplementary material**.

Figure F33. Compilation of biostratigraphic and chronostratigraphic markers, Site U1450. Calcareous nannofossil and foraminiferal biozones follow Gradstein et al. (2012; based on Martini, 1971, and Okada and Bukry, 1980) and Wade et al., (2011), respectively. Biomarkers are calculated as midpoints (Table **T3**). Diagonal line in biozones = overlap sequence between Holes U1450A and U1450B. Paleomagnetic reversals follow the chronostratigraphic scheme of Gradstein et al. (2012); boundaries are the lower depth of the identified reversal (Table **T10**).

Figure F34. Age-depth plot, Site U1450. Interpreted lithology proposes the most probable lithologies in intervals of nonrecovery. Nannofossil and foraminiferal biomarkers are plotted as midpoints; error bars = uncertainty in depth. For biomarkers: right arrow = first occurrence, left arrow = last occurrence (Table **T3**). For magnetic reversals, see Table **T10**. Dashed lines = ash layers. Cross = youngest Toba ash (~75 ka). No age is assigned to the other ash layer. Black arrows = selected accumulation rates.

Figure F35. Age-depth plot for 0–2 Ma, Site U1450. Interpreted lithology proposes the most probable lithologies in intervals of nonrecovery. Nannofossil and foraminiferal biomarkers are plotted as midpoints; error bars = uncertainty in depth. For biomarkers: right arrow = first occurrence, left arrow = last occurrence (Table **T3**). For magnetic reversals, see Table **T10**. Dashed line and cross = youngest Toba ash (~75 ka) identified in Core 1H. Black arrows = selected accumulation rates.

Figure F36. Seismic Line SO125-GeoB97-027, upper 1.1 s TWT of seismic section, Site U1450. Lithologic column is adjusted to the seismic data by matching most of the hemipelagic units with distinct reflectors. For lithologic legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). Porosity values from MAD samples are plotted next to the seismic section to illustrate the weak compaction trend. Ages are derived from Figure **F33**, clearly illustrating the variable sediment accumulation rates between different phases of fan deposition. For a larger version of this figure, see STRATSYNTH in **Supplementary material**.