

Contents

List of Contributors	xiii
Preface	xx
Acknowledgements	xxi
 Section 1 Introduction	
DOWDESWELL, J. A., CANALS, M., JAKOBSSON, M., TODD, B. J., DOWDESWELL, E. K. & HOGAN, K. A. Introduction: an <i>Atlas of Submarine Glacial Landforms</i>	3
 Section 2 Acoustic methods	
JAKOBSSON, M., GYLLENCREUTZ, R., MAYER, L. A., DOWDESWELL, J. A., CANALS, M., TODD, B. J., DOWDESWELL, E. K., HOGAN, K. A. & LARTER, R. D. Mapping submarine glacial landforms using acoustic methods	17
 Section 3a Fjords: landforms	
DOWDESWELL, J. A., BATCHELOR, C. L., HOGAN, K. A. & SCHENKE, H.-W. Nordvestfjord: a major East Greenland fjord system	43
BARNES, P. M., PICKRILL, R. A. & BOSTOCK, H. C. Thompson and Bradshaw sounds, Fiordland, New Zealand: a relict, mid-latitude, temperate glacier system	45
MACLEAN, B., BLASCO, S., BENNETT, R., HUGHES CLARKE, J. E. & PATTON, E. Mega-scale glacial lineations, Peel Sound, Canadian Arctic Archipelago	47
BENNETT, R., MACLEAN, B., BLASCO, S. & HUGHES CLARKE, J. E. Glacial lineations in Navy Board Inlet, Nunavut, Canada	49
MACLEAN, B., BLASCO, S., BENNETT, R., HUGHES CLARKE, J. E. & PATTON, E. Moat features, Amundsen Gulf, Canadian Arctic Archipelago	51
MACLEAN, B., BLASCO, S., BENNETT, R., HUGHES CLARKE, J. E. & PATTON, E. Crag-and-tail features, Amundsen Gulf, Canadian Arctic Archipelago	53
DOWDESWELL, E. K., TODD, B. J. & DOWDESWELL, J. A. Crag-and-tail features: convergent ice flow through Eclipse Sound, Baffin Island, Arctic Canada	55
FRANSNER, O., NOORMETS, R., FLINK, A. E. & HOGAN, K. A. Crag-and-tail landforms in outer Rjipfjorden, Nordaustlandet, Svalbard	57
DOWDESWELL, J. A., TODD, B. J., DOWDESWELL, E. K. & BATCHELOR, C. L. Ice-sculpted bedrock in channels of the Canadian Arctic Archipelago	59
NOORMETS, R., KIRCHNER, N. & FLINK, A. E. Submarine medial moraines in Hambergbukta, southeastern Spitsbergen	61
BRADWELL, T. & STOKER, M. S. Recessional moraines in nearshore waters, northern Scotland	63
LASTRAS, G. & DOWDESWELL, J. A. Terminal and recessional moraines in the fjords of southern Chile	65
GRAHAM, A. G. C. & HODGSON, D. A. Terminal moraines in the fjord basins of sub-Antarctic South Georgia	67
HILBE, M., STRUPLER, M., HANSEN, L., EILERTSEN, R. S., VAN DAELE, M., DE BATIST, M. & ANSELMETTI, F. S. Moraine ridges in fjord-type, perialpine Lake Lucerne, central Switzerland	69
BURTON, D. J., DOWDESWELL, J. A., HOGAN, K. A. & NOORMETS, R. Little Ice Age terminal and retreat moraines in Kollerfjorden, NW Spitsbergen	71
DOWDESWELL, J. A., SOLHEIM, A. & OTTESEN, D. Rhombohedral crevasse-fill ridges at the marine margin of a surging Svalbard ice cap	73
FLINK, A. E., NOORMETS, R. & KIRCHNER, N. Annual moraine ridges in Tempelfjorden, Spitsbergen	75
DOWDESWELL, J. A., OTTESEN, D. & PLASSEN, L. Debris-flow lobes on the distal flanks of terminal moraines in Spitsbergen fjords	77
SHAW, J. Fjord-mouth submarine moraines, SW Newfoundland	79
SHAW, J. & LINTERN, D. G. Landforms in a Pacific fjord system: Douglas Channel, British Columbia, Canada	81

DOWDESWELL, J. A. & OTTESEN, D. Eskers formed at the beds of modern surge-type tidewater glaciers in Spitsbergen	83
FORWICK, M., KEMPF, P. & LABERG, J. S. Eskers in deglacial sediments of three Spitsbergen fjords	85
LAJEUNESSE, P. Long continuous dendritic eskers offshore of Southampton Island, northern Hudson Bay	87
DOWDESWELL, E. K., TODD, B. J. & DOWDESWELL, J. A. Ice-proximal fans in Dexterity Fjord, Buchan Gulf, Baffin Island, Canadian Arctic	89
BARNES, P. M., PICKRILL, R. A., BOSTOCK, H. C., DLABOLA, E. K., GORMAN, A. R. & WILSON, G. S. Relict proglacial deltas in Bradshaw and George sounds, Fiordland, New Zealand	91
STACEY, C. D. & HILL, P. R. Cyclic steps on a glaci-fluvial delta, Howe Sound, British Columbia	93
EILERTSEN, R. S., LONGVA, O. & CORNER, G. D. A Younger Dryas moraine ridge and fjord delta in Valldal, Norddalsfjorden, Møre og Romsdal, Norway	95
SHAW, J. Paraglacial landscapes in St George's Bay, Newfoundland, Canada	97
Ó COFAIGH, C., HOGAN, K. A., DOWDESWELL, J. A. & STREUFF, K. Stratified glaci-marine basin-fills in West Greenland fjords	99
NOORMETS, R., KIRCHNER, N., FLINK, A. E. & DOWDESWELL, J. A. Possible iceberg-produced submarine terraces in Hambergbukta, Spitsbergen	101
EVANS, J. & DOWDESWELL, J. A. Submarine gullies and an axial channel in glacier-influenced Courtauld Fjord, East Greenland	103
DOWDESWELL, J. A., OTTESEN, D. & NOORMETS, R. Submarine slides from the walls of Smeerenburgfjorden, NW Svalbard	105
LASTRAS, G., AMBLAS, D., CANALS, M. & DETSUFA SHIPBOARD PARTY. Fjord-flank collapse and associated deformation in Aysén Fjord, Chile	107
DOWDESWELL, J. A., DOWDESWELL, E. K. & RODRIGO, C. Pockmarks in the fjords of Chilean Patagonia	109
BROTHERS, L. L., LEGERE, C., HUGHES CLARKE, J. E., KELLEY, J. T., BARNHARDT, W. A., ANDREWS, B. D. & BELKNAP, D. F. Pockmarks in Passamaquoddy Bay, New Brunswick, Canada	111
EILERTSEN, R. S., BØE, R., HERMANN, R., LONGVA, O. & DAHLGREN, S. Kettle holes, 'dead-ice' topography and eskers on a lake floor in Telemark, southern Norway	113
O'BRIEN, P. E., SMITH, J. & RIDDLE, M. Bouldery debris mantle deposited by cold-based ice offshore of the Vestfold Hills, East Antarctica	115
GREENWOOD, S. L. & JAKOBSSON, M. Enigmatic ridges in Lake Vättern, Sweden	117
JAKOBSSON, M., O'REGAN, M., GREENWOOD, S. L., FLODÉN, T., SWÄRD, H., BJÖRCK, S. & SKELTON, A. Postglacial tectonic structures and mass wasting in Lake Vättern, southern Sweden	119
SHAW, J. & POTTER, D. P. Anthropogenic modification of a fjord: Bay of Islands, Newfoundland	121
TODD, B. J. & SHAW, J. Tidal power generation in the glaciated, macrotidal Minas Scour Trough, Bay of Fundy, Atlantic Canada	123
LAVOIE, C., DOMACK, E. W., HEIRMAN, K., NAUDTS, L. & BRACHFELD, S. A Holocene volcanic knoll within a glacial trough, Antarctic Sound, northern Antarctic Peninsula	125
LAJEUNESSE, P., DUCHESNE, M. J., ST-ONGE, G., LOCAT, J., HIGGINS, M., SANFAÇON, R. & ORTIZ, J. The Corossol Structure: a glaciated crater of possible impact origin in the northwestern Gulf of St Lawrence, eastern Canada	127
Section 3b Fjords: landform assemblages	
DOWDESWELL, J. A., DOWDESWELL, E. K., RODRIGO, C. & DIAZ, J. Assemblage of glacial and related landforms in the fjords of southern Chile	131
DOVE, D., FINLAYSON, A., BRADWELL, T., HOWE, J. A. & AROSIO, R. Deglacial landform assemblage records fast ice-flow and retreat, Inner Hebrides, Scotland	135
SHAW, J. & POTTER, D. P. A glacial landform assemblage in Placentia Bay, Newfoundland, eastern Canada	139
GEIRSDÓTTIR, Á., MILLER, G. H. & LARSEN, D. J. Landforms in Hvítárvatn, central Iceland, produced by recent advances of surging and non-surging glaciers	143

FORWICK, M., DOWDESWELL, J. A., LABERG, J. S. & OTTESEN, D. Glacial landform assemblages in Spitsbergen fjords from the last full-glacial, deglaciation and the late Holocene	147
DOWDESWELL, J. A. & OTTESEN, D. Submarine landform assemblage for Svalbard surge-type tidewater glaciers	151
BATCHELOR, C. L., DOWDESWELL, J. A., DOWDESWELL, E. K., TODD, B. J. & SHARP, M. J. A tidewater glacier landform assemblage in Belcher Inlet, Canadian Arctic	155
Section 4a Continental shelf: landforms	
TODD, B. J. The Laurentian Channel: a major cross-shelf trough in Atlantic Canada	161
PINET, N., BRAKE, V. & DUCHESNE, M. J. Partly-filled U-shaped morphology of the Laurentian Channel, St Lawrence Estuary, Canada	163
CLARK, C. D. & SPAGNOLO, M. Glacially eroded cross-shelf troughs surrounding Iceland from Olex data	165
RYAN, J. C., DOWDESWELL, J. A. & HOGAN, K. A. Three cross-shelf troughs on the continental shelf of SW Greenland from Olex data	167
BELLEÇ, V. K., PLASSEN, L., RISE, L. & DOWDESWELL, J. A. Malangsdjupet: a cross-shelf trough on the North Norwegian margin	169
CANALS, M., AMBLAS, D. & CASAMOR, J. L. Cross-shelf troughs in Central Bransfield Basin, Antarctic Peninsula	171
MOREAU, J. & GHIENNE, J.-F. Cross-shelf trough and ice-stream lineations in the 440 Ma Late Ordovician rocks of northern Africa mapped from high-resolution satellite imagery	173
Ó COFAIGH, C., LIVINGSTONE, S. J. & DOWDESWELL, J. A. Mega-scale glacial lineations in Marguerite Trough, Antarctic Peninsula	175
CANALS, M. & AMBLAS, D. The bundle: a mega-scale glacial landform left by an ice stream, Western Bransfield Basin	177
RISE, L., OTTESEN, D., OLESEN, O. & DOWDESWELL, J. A. Buried mega-scale glacial lineations in the Norwegian Channel from 3D seismic imagery	179
DOWDESWELL, J. A., OTTESEN, D. & RISE, L. 3D seismic imagery of mega-scale glacial lineations and flow-switching by ice streams on the Norwegian continental shelf	181
TASIANAS, A., BÜNZ, S., VADAKKEPULIYAMBATTA, S. & MIENERT, J. Buried subglacial landforms in the SW Barents Sea imaged using high-resolution P-Cable seismic data	183
GUITARD, M. E., SHEVENELL, A. E., LAVOIE, C. & DOMACK, E. W. Mega-scale glacial lineations and grounding-zone wedges in Prydz Channel, East Antarctica	185
BJARNADÓTTIR, L. R. & ANDREASSEN, K. Enigmatic needle-like seafloor features in the Bear Island Trough, central Barents Sea	187
RÜTHER, D. C., ANDREASSEN, K. & SPAGNOLO, M. Aligned glacitectonic rafts on the floor of the central Barents Sea	189
OTTESEN, D., DOWDESWELL, J. A., RISE, L., THORSNES, T. & BELLEÇ, V. K. Lateral ice-stream shear-margin moraines on north Norwegian shelves	191
DOWDESWELL, E. K., TODD, B. J. & DOWDESWELL, J. A. Submarine medial moraines and convergent ice flow, Scott Inlet, Baffin Island, Arctic Canada	193
Ó COFAIGH, C., DUNLOP, P. & BENETTI, S. Submarine drumlins on the continental shelf offshore of NW Ireland	195
JAKOBSSON, M., GREENWOOD, S. L., HELL, B. & ÖIÁS, H. Drumlins in the Gulf of Bothnia	197
NITSCHÉ, F. O., LARTER, R. D., GOHL, K., GRAHAM, A. G. C. & KUHN, G. Crag-and-tail features on the Amundsen Sea continental shelf, West Antarctica	199
GYLLENCREUTZ, R., FREIRE, F., GREENWOOD, S. L., MAYER, L. A. & JAKOBSSON, M. Glacial landforms in a hard bedrock terrain, Melville Bay, northwestern Greenland	201
RISE, L., BELLEÇ, V. K., OTTESEN, D., BØE, R. & THORSNES, T. Hill–hole pairs on the Norwegian continental shelf	203
BØE, R., OTTESEN, D., RISE, L. & DOWDESWELL, J. A. Streamlined ridges and depressions in the glacial sediments of the Arendal Terrace, Norwegian Skagerrak	205

HUUSE, M. & KRISTENSEN, T. B. Pleistocene tunnel valleys in the North Sea Basin	207
GREENWOOD, S. L., JAKOBSSON, M., HELL, B. & ÖIÅS, H. Esker systems in the Gulf of Bothnia	209
DOMACK, E. W., AMBLAS, D. & CANALS, M. Bedrock meltwater channels in Palmer Deep, Antarctic Peninsula	211
CANALS, M. & AMBLAS, D. Small, deep shelf-basins and their sedimentary infill, western Bransfield Strait, Antarctic Peninsula	213
HOGAN, K. A., DOWDESWELL, J. A., LARTER, R. D., Ó COFAIGH, C. & BARTHOLOMEW, I. Subglacial meltwater channels in Marguerite Trough, western Antarctic Peninsula	215
NITSCHKE, F. O., LARTER, R. D., GOHL, K., GRAHAM, A. G. C. & KUHN, G. Bedrock channels in Pine Island Bay, West Antarctica	217
DUTRIEUX, P., JENKINS, A. & NICHOLLS, K. W. Ice-shelf basal morphology from an upward-looking multibeam system deployed from an autonomous underwater vehicle	219
GRAHAM, A. G. C. & HOGAN, K. A. Crescentic scours on palaeo-ice stream beds	221
DOWDESWELL, J. A., OTTESEN, D., RISE, L. & FORSBERG, C. F. Fan-like sediments on outer Haltenbanken, mid-Norwegian shelf	223
BARRIE, J. V. & CONWAY, K. W. Glacier-fed outwash plain on the Pacific margin of Canada	225
LAJEUNESSE, P. Late Wisconsinan grounding-zone wedges, northwestern Gulf of St Lawrence, eastern Canada	227
DOWDESWELL, J. A. & OTTESEN, D. A set of grounding-zone wedges in Vestfjorden, North Norway	229
REBESCO, M., URGELES, R., ÖZMARAL, A. & CORIBAR SCIENTIFIC PARTY. Grounding-zone wedges and mega-scale glacial lineations in Kveithola Trough, Barents Sea	231
DOWDESWELL, J. A., OTTESEN, D. & FORWICK, M. Grounding-zone wedges on the western Svalbard shelf	233
DOWDESWELL, J. A., FUGELLI, E. M. G. & BATCHELOR, C. L. Grounding-zone wedges on the West Greenland shelf imaged from multibeam and seismic data	235
EVANS, J. & HOGAN, K. A. Grounding-zone wedges on the northern Larsen shelf, Antarctic Peninsula	237
BART, P. J. & NITSCHKE, F. O. Geometry and volume of a middle shelf grounding-zone wedge in Ross Sea, Antarctica	239
McMULLEN, K., DOMACK, E. W., LEVENTER, A., LAVOIE, C. & CANALS, M. Grounding-zone wedges and mega-scale glacial lineations in the Mertz Trough, East Antarctica	241
ANDERSON, J. B. & JAKOBSSON, M. Grounding-zone wedges on Antarctic continental shelves	243
DECALF, C., DOWDESWELL, J. A. & FUGELLI, E. M. G. Seismic character of possible buried grounding-zone wedges in the Late Ordovician glacial rocks of Algeria	245
ELVENES, S. & DOWDESWELL, J. A. Possible 'lift-off moraines' at grounded ice-sheet margins, North Norwegian shelf edge	247
DOWDESWELL, J. A., OTTESEN, D. & RISE, L. Skjoldryggen terminal moraine on the mid-Norwegian shelf	249
DICKENS, W. A., GRAHAM, A. G. C., SMITH, J. A. & DOWDESWELL, J. A. Large, buried glacial moraines revealed by TOPAS sub-bottom profiling, South Orkney Islands, South Atlantic Ocean	251
Ó COFAIGH, C., BENETTI, S., DUNLOP, P. & MONTEYS, X. Arcuate moraines on the continental shelf NW of Ireland	253
DOWDESWELL, J. A. & OTTESEN, D. Current-modified recessional-moraine ridges on the NW Spitsbergen shelf	255
TODD, B. J. Recessional moraines on the southern Scotian Shelf of Atlantic Canada	257
TODD, B. J. De Geer moraines on German Bank, southern Scotian Shelf of Atlantic Canada	259
ELVENES, S., BØE, R. & RISE, L. Post-glacial sand drifts burying De Geer moraines on the continental shelf off North Norway	261
ARNDT, J. E. & EVANS, J. Glacial lineations and recessional moraines on the continental shelf of NE Greenland	263
JAKOBSSON, M. & ANDERSON, J. B. Corrugation ridges in the Pine Island Bay glacier trough, West Antarctica	265

KING, E. L., RISE, L. & BELLEC, V. K. Crescentic submarine hills and holes produced by iceberg calving and rotation	267
DOWDESWELL, J. A. & HOGAN, K. A. Huge iceberg ploughmarks and associated corrugation ridges on the northern Svalbard shelf	269
HILL, J. C. Iceberg ploughmarks on the upper continental slope, South Carolina	271
LÓPEZ-MARTÍNEZ, J., RIVERA, J., DOWDESWELL, J. A. & ACOSTA, J. Giant ploughmarks on the South Patagonian continental margin produced by Antarctic icebergs	273
STEWART, T. J., STAGPOOLE, V. M., WOOD, R. A. & CARTER, L. Ploughmarks and pits on the Chatham Rise: a record of deep-keeled Antarctic icebergs at 43° 20' S	275
SACCHETTI, F., Ó COFAIGH, C. & BENETTI, S. Iceberg ploughmarks on Rockall Bank, NE Atlantic	277
LEWIS, C. F. M., TODD, B. J., SONNICHSEN, G. V. & KING, T. Iceberg–seabed interaction on northwestern Makkovik Bank, Labrador Shelf, Canada	279
VADAKKEPULIYAMBATTA, S., BÜNZ, S., TASIANNAS, A. & MIENERT, J. Iceberg ploughmarks in the SW Barents Sea imaged using high-resolution P-Cable 3D seismic data	281
BJARNADÓTTIR, L. R., OTTESEN, D., DOWDESWELL, J. A. & BUGGE, T. Unusual iceberg ploughmarks on the Norwegian continental shelf	283
ARNDT, J. E. & FORWICK, M. Deep-water iceberg ploughmarks on Hovgaard Ridge, Fram Strait	285
JAKOBSSON, M. & O'REGAN, M. Deep iceberg ploughmarks in the central Arctic Ocean	287
GALES, J. A., LARTER, R. D. & LEAT, P. T. Iceberg ploughmarks and associated sediment ridges on the southern Weddell Sea margin	289
DOWDESWELL, J. A. & OTTESEN, D. Three-dimensional seismic imagery of deeply buried iceberg ploughmarks in North Sea sediments	291
THORSNES, T., BRUNSTAD, H., LÅGSTAD, P. & CHAND, S. Trawl marks, iceberg ploughmarks and possible whale-feeding marks, Barents Sea	293
CHAND, S., THORSNES, T., RISE, L., BRUNSTAD, H. & STODDART, D. Pockmarks in the SW Barents Sea and their links with iceberg ploughmarks	295
JAKOBSSON, M. & O'REGAN, M. Pockmarks on the Mendeleev Rise, central Arctic Ocean	297
DOWDESWELL, J. A. & TODD, B. J. Mud volcanoes and ice-keel ploughmarks, Beaufort Sea shelf, Arctic Canada	299
ANANYEV, R., DMITREVSKIY, N., JAKOBSSON, M., LOBKOVSKY, L., NIKIFOROV, S., ROSLYAKOV, A. & SEMILETOV, I. Sea-ice ploughmarks in the eastern Laptev Sea, East Siberian Arctic shelf	301
WILKINSON, J. P. & WADHAMS, P. The three-dimensional shape of sea ice revealed by multibeam sonar	303
JAKOBSSON, M., O'REGAN, M., GYLLENCREUTZ, R. & FLODÉN, T. Seafloor terraces and semi-circular depressions related to fluid discharge in Stockholm Archipelago, Baltic Sea	305
THORSNES, T., BELLEC, V. K. & DOLAN, M. F. J. Cold-water coral reefs and glacial landforms from Sula Reef, mid-Norwegian shelf	307
BØE, R., BELLEC, V. K., DOLAN, M. F. J., BUHL-MORTENSEN, P., RISE, L. & BUHL-MORTENSEN, L. Cold-water coral reefs in the Hola glacial trough off Vesterålen, North Norway	309
LOBKOVSKY, L., ANANYEV, R., DMITREVSKIY, N., DUDAREV, O., JAKOBSSON, M., NIKIFOROV, S. & ROSLYAKOV, A. Permafrost patterns in the SE Laptev Sea, East Siberian Arctic Ocean	311
CANALS, M. & AMBLAS, D. Seafloor kettle holes in Orleans Trough, Bransfield Basin, Antarctic Peninsula	313
Section 4b Continental shelf: landform assemblages	
STEWART, M. A. Assemblage of buried and seabed tunnel valleys in the central North Sea: from morphology to ice-sheet dynamics	317
GREENWOOD, S. L., CLASON, C. C. & JAKOBSSON, M. Ice-flow and meltwater landform assemblages in the Gulf of Bothnia	321
BJARNADÓTTIR, L. R. & ANDREASSEN, K. Ice-stream landform assemblage in Kveithola, western Barents Sea margin	325

BATCHELOR, C. L., DOWDESWELL, J. A., JAKOBSSON, M., HOGAN, K. A. & GEBHARDT, C. A. Landform assemblage produced by ice-grounding events on the Yermak Plateau	329
HOGAN, K. A., DOWDESWELL, J. A. & NOORMETS, R. Assemblages of submarine landforms in the glacial troughs of the northern Barents Sea, east of Svalbard	333
BATCHELOR, C. L., DOWDESWELL, J. A., DOWDESWELL, E. K. & TODD, B. J. A subglacial landform assemblage on the outer shelf of M'Clure Strait, Canadian Arctic, ploughed by iceberg keels	337
AMBLAS, D. & CANALS, M. Landform assemblage produced by the Biscoe Trough ice stream, northern Antarctic Peninsula	341
GRAHAM, A. G. C., NITSCHKE, F. O., LARTER, R. D. & GOHL, K. Submarine landform assemblage produced beneath the Dotson–Getz palaeo-ice stream, West Antarctica	345
KLAGES, J. P., KUHN, G., HILLENBRAND, C.-D., GRAHAM, A. G. C., SMITH, J. A., LARTER, R. D. & GOHL, K. A glacial landform assemblage from an inter-ice stream setting in the eastern Amundsen Sea Embayment, West Antarctica	349
SIMKINS, L. M., ANDERSON, J. B. & GREENWOOD, S. L. Glacial landform assemblage reveals complex retreat of grounded ice in the Ross Sea, Antarctica	353
Section 5 Continental slope: landforms	
OWEN, M. J. & LONG, D. Barra Fan: a major glacial depocentre on the western continental margin of the British Isles	359
STEWART, H. A. & LONG, D. Glacigenic debris-flows observed in 3D seismic high-resolution seafloor imagery, Faroe–Shetland Channel, NE Atlantic	361
PIPER, D. J. W., CAMPBELL, D. C. & MOSHER, D. C. Mid-latitude complex trough-mouth fans, Laurentian and Northeast fans, eastern Canada	363
RYDNINGEN, T. A., LABERG, J. S. & KOLSTAD, V. Evolution of Andfjorden Trough-Mouth Fan, Norwegian Sea: buried glacigenic debris-flows and mega-scale glacial lineations	365
LABERG, J. S. & DOWDESWELL, J. A. Glacigenic debris-flows on the Bear Island Trough-Mouth Fan, Barents Sea margin	367
OTTESEN, D., DOWDESWELL, J. A. & BUGGE, T. Deeply buried glacigenic debris-flows imaged in 3D seismic data from early Quaternary sediments of the northern North Sea	369
CAMERLENGHI, A., REBESCO, M. & ACCETTELLA, D. Storfjorden Trough-Mouth Fan, Barents Sea margin	371
REBESCO, M., CAMERLENGHI, A. & LLOPART, J. Glacigenic debris-flow deposits, Storfjorden Fan	373
LARTER, R. D., HOGAN, K. A., HILLENBRAND, C.-D. & BENETTI, S. Debris-flow deposits on the West Antarctic continental slope	375
GALES, J. A., LARTER, R. D., LEAT, P. T. & JOKAT, W. Components of an Antarctic trough-mouth fan: examples from the Crary Fan, Weddell Sea	377
GREENE, H. G., REYNOLDS, J. R. & TODD, B. J. Ice-sheet related landforms at the continental shelf edge, Albatross Bank, Alaska	379
BELLEC, V. K., RISE, L., BØE, R. & DOWDESWELL, J. A. Glacially related gullies on the upper continental slope, SW Barents Sea margin	381
GALES, J. A., LARTER, R. D. & LEAT, P. T. Submarine gullies on the southern Weddell Sea slope, Antarctica	383
DOWDESWELL, J. A., DOWDESWELL, E. K., TODD, B. J., SAINT-ANGE, F. & PIPER, D. J. W. Channels and gullies on the continental slope seaward of a cross-shelf trough, Labrador margin, eastern Canada	385
GARDNER, J. V. & MAYER, L. A. Chatham Fan and adjacent upper Baranof Fan channels and levee, US Gulf of Alaska margin	387
MAYER, L. A. & GARDNER, J. V. Cascades and plunge pools on the continental slope of the Gulf of Alaska	389
MAYER, L. A., GARDNER, J. V. & ARMSTRONG, A. A. An ultrahigh-latitude submarine channel: Northern Chukchi Rise	391
AMBLAS, D. & CANALS, M. Contourite drifts and canyon-channel systems on the Northern Antarctic Peninsula Pacific margin	393
LABERG, J. S., BAETEN, N. J., FORWICK, M. & WIBERG, D. H. Ocean-current controlled sedimentation: the Lofoten Contourite Drift, Norwegian Sea	395

BAETEN, N. J., LABERG, J. S. & FORWICK, M. Submarine mass movements affecting contourites on the continental slope offshore of the Lofoten Islands, North Norway	397
VOLPI, V., ACCETTELLA, D., DIVIACCO, P. & REBESCO, M. Slope instability along the western margin of the Antarctic Peninsula	399
LARTER, R. D., HOGAN, K. A. & DOWDESWELL, J. A. Large sediment drifts on the upper continental rise west of the Antarctic Peninsula	401
CAMERON, G. D. M., KING, E. L. & TODD, B. J. A large, glacially modified, shelf-edge canyon, Scotian Shelf, Atlantic Canada	403
DOWDESWELL, E. K., TODD, B. J. & DOWDESWELL, J. A. Canyons and slides on the continental slope seaward of a shallow bank, Labrador margin, eastern Canada	405
RISE, L., BØE, R., BELLEC, V. K., THORSNES, T. & DOWDESWELL, J. A. Canyons and slope instability on the Lofoten–Vesterålen continental margin, North Norway	407
LABERG, J. S., AMUNDSEN, H. B. & RYDNINGEN, T. A. The Andøya Canyon, Norwegian Sea	409
MICALLEF, A., MASSON, D. G., BERNDT, C. & STOW, D. A. V. Submarine spreading in the Storegga Slide, Norwegian Sea	411
THORSNES, T., RISE, L., BELLEC, V. K. & CHAND, S. Shelf-edge slope failure and reef development: Trænadjupet Slide, mid-Norwegian shelf	413
HOGAN, K. A., VANNESTE, M., DOWDESWELL, J. A. & MIENERT, J. Geomorphology of the huge Hinlopen–Yermak landslide on the northern Svalbard margin	415
CANALS, M., AMBLAS, D., CASAMOR, J. L. & LASTRAS, G. Gebra Slide: glacial and tectonic controls on recurrent submarine landsliding off the northern tip of the Antarctic Peninsula	417
Section 6 Fjord–shelf–slope: landsystems	
BRADWELL, T. & STOKER, M. S. Glacial sediment and landform record offshore NW Scotland: a fjord–shelf–slope transect through a Late Quaternary mid-latitude ice-stream system	421
TODD, B. J., SHAW, J. & VALENTINE, P. C. Submarine glacial landforms on the Bay of Fundy–northern Gulf of Maine continental shelf	429
DOWDESWELL, J. A., OTTESEN, D. & RISE, L. Landforms characteristic of inter-ice stream settings on the Norwegian and Svalbard continental margins	437
ANDREASSEN, K., BJARNADÓTTIR, L. R., RÜTHER, D. C. & WINSBORROW, M. C. M. Retreat patterns and dynamics of the former Bear Island Trough Ice Stream	445
DOWDESWELL, J. A., HOGAN, K. A. & Ó COFAIGH, C. Submarine glacial-landform distribution across the West Greenland margin: a fjord–shelf–slope transect through the Uummannaq system (70–71° N)	453
GARCÍA, M., BATCHELOR, C. L., DOWDESWELL, J. A., HOGAN, K. A. & Ó COFAIGH, C. A glacier-influenced turbidite system and associated landform assemblage in the Greenland Basin and adjacent continental slope	461
JAKOBSSON, M. Submarine glacial landform distribution in the central Arctic Ocean shelf–slope–basin system	469
CANALS, M., AMBLAS, D., DOMACK, E. W., LASTRAS, G., LAVOIE, C., CASAMOR, J. L. & SMITH, C. The seafloor imprint of the Gerlache–Boyd Ice Stream (65–62° S), northern Antarctic Peninsula	477
LIVINGSTONE, S. J., Ó COFAIGH, C., HOGAN, K. A. & DOWDESWELL, J. A. Submarine glacial-landform distribution along an Antarctic Peninsula palaeo-ice stream: a shelf–slope transect through the Marguerite Trough system (66–70° S)	485
GRAHAM, A. G. C., JAKOBSSON, M., NITSCHKE, F. O., LARTER, R. D., ANDERSON, J. B., HILLENBRAND, C.-D., GOHL, K., KLAGES, J. P., SMITH, J. A. & JENKINS, A. Submarine glacial-landform distribution across the West Antarctic margin, from grounding line to slope: the Pine Island–Thwaites ice-stream system	493
O'BRIEN, P. E., BEAMAN, R., DE SANTIS, L., DOMACK, E. W., ESCUTIA, C., HARRIS, P. T., LEVENTER, A., McMULLEN, K., POST, A., QUILTY, P. G., SHEVENNELL, A. & BATCHELOR, C. L. Submarine glacial landforms on the cold East Antarctic margin	501
LE HERON, D. P. The Hirnantian glacial landsystem of the Sahara: a meltwater-dominated system	509

Section 7 Conclusion

DOWDESWELL, J. A., CANALS, M., JAKOBSSON, M., TODD, B. J., DOWDESWELL, E. K. & HOGAN, K. A. The variety and distribution of submarine glacial landforms and implications for ice-sheet reconstruction	519
---	-----

Section 8 Glossary, cumulated bibliography and index

BELL, T., COOPER, A. K., SOLHEIM, A., TODD, B. J., DOWDESWELL, J. A., CANALS, M., JAKOBSSON, M., DOWDESWELL, E. K. & HOGAN, K. A. Glossary of glaciated continental margins and related geoscience methods	555
--	-----

Cumulated bibliography	575
------------------------	-----

Geographical index	612
--------------------	-----

Subject index	615
---------------	-----