

WMO SEA-ICE NOMENCLATURE

TERMINOLOGY - VOLUME I WMO/OMM/BMO - No.259 • Edition 1970 - 2017 Ice terms arranged in alphabetical order

Aged ridge (*Vieille crête* [fr]): *Ridge* which has undergone considerable weathering. These *ridges* are best described as undulations. (8.2.2.4)

Anchor ice (*Glace de fond* [fr]): Submerged ice attached or anchored to the bottom, irrespective of the nature of its formation. (3.3)

Area of weakness (*Zone de fragilité* [fr]): A satellite-observed area in which either the ice *concentration* or the ice thickness is significantly less than that in the surrounding areas. Because the condition is satellite observed, a precise quantitative analysis is not always possible, but navigation conditions are significantly easier than in surrounding areas. (12.7)

Arrangement (*Disposition des glaces* [fr]) (4.4)

Bare ice (*Glace vive* [fr]): Ice without snow cover. (8.5)

Belt (*Ceinture (de glace)* [fr]): A large feature of *drift ice* arrangement; longer than it is wide; from 1 km to more than 100 km in width. (4.4.3)

Bergy bit (*Fragment d'iceberg* [fr]): Cf. 10.4.4 - A large piece of floating *glacier ice*, generally showing less than 5 m above sea-level but more than 1 m and normally about 100-300 m² in area. (4.3.7.15)

Bergy bit (*Fragment d'iceberg* [fr]): A large piece of floating *glacier ice*, generally showing less than 5 m above sea-level but more than 1 m and normally about 100-300 m² in area. (10.4.4)

Bergy water (*Bergy water* [fr]): An area of freely navigable water in which *ice of land origin* is present in *concentrations* less than 1/10. There may be *sea ice* present, although the total *concentration* of all ice shall not exceed 1/10. (4.2.7)

Beset (*Coincé* [fr]): Situation of a vessel surrounded by ice and unable to move. (12.1)

Bight (*Baie* [fr]): An extensive crescent-shaped indentation in the *ice edge*, formed by either wind or current. (4.4.6)

Blocky iceberg (*Iceberg en bloc* [fr]): A flat-topped iceberg with steep vertical sides. (4.3.7.7)

Brash ice (*Brash* [fr]): Accumulations of *floating ice* made up of fragments not more than 2 m across, the wreckage of other forms of ice. (4.3.6)

Bummock (*Bummock* [fr]): From the point of view of the submariner, a downward projection from the underside of the *ice canopy*; the counterpart of a *hummock*. (13.4)

Cake ice (*Glace en pain* [fr]): Cake Ice is commonly used in Antarctica to refer to a collection of ice cakes. This should not to be confused with *pancake ice*. Cake ice is older and thicker than *pancake ice*. (4.3.3)

Calved ice of land origin (*Glace vêlée d'origine terrestre* [fr]) (10.4)

Calving (*Vélage* [fr]): The breaking away of a mass of ice from an *ice wall*, *ice front* or *iceberg*. (10.4.1)

Close ice (*Glace serrée* [fr]): *Floating ice* in which the *concentration* is 7/10 to 8/10, composed of *floes* mostly in contact. (4.2.3)

Compact ice (*Glace compacte* [fr]): *Floating ice* in which the *concentration* is 10/10 and no water is visible. (4.2.1)

Compacted ice edge (*Lisière serrée* [fr]): Close, clear-cut *ice edge* compacted by wind or current; usually on the windward side of an area of *drift ice*. (4.4.8.1)

Compacting (*Tassement* [fr]): Pieces of *floating ice* are said to be compacting when they are subjected to a converging motion, which increases ice *concentration* and/or produces stresses which may result in ice deformation. (5.2)

Concentration (*Concentration* [fr]): The ratio expressed in tenths* describing the amount of the sea surface covered by ice as a fraction of the whole area being considered. Total *concentration* includes all stages of development that are present, partial *concentration* may refer to the amount of a particular stage or of a particular form of ice and represents only a part of the total.

*Note: In historical sea-ice data octas have been used by some countries. (4.2)

Concentration boundary (*Ligne de démarcation de concentrations* [fr]): A line approximating the transition between two areas of *drift ice* with distinctly different *concentrations*. (4.4.9.2)

Consolidated ice (*Glace consolidée* [fr]): *Floating ice* in which the *concentration* is 10/10 and the *floes* are frozen together. (4.2.1.1)

Consolidated ridge (*Crête consolidée* [fr]): A *ridge* in which the base has frozen together. (8.2.2.5)

Crack (*Fissure* [fr]): Any *fracture of fast ice, consolidated ice* or a single *floe* which may have been followed by separation ranging from a few centimeters to 1 m. (7.1.1)

Dark nilas (*Nilas sombre* [fr]): *Nilas* which is under 5 cm in thickness and is very dark in colour. (2.2.1)

Deformation processes (*Processus de déformation* [fr]) (6)

Deformed ice (*Glace déformée* [fr]): A general term for ice which has been squeezed together and in places forced upwards (and downwards). Subdivisions are *rafted ice, ridged ice* and *hummocked ice*. (8.2)

Development (*Formation de la glace* [fr]) (2)

Development of lake ice (*Formation de glace de lac* [fr]): Because of the absence of salt in the water, the freezing and growth processes of *lake ice* are considerably different from those of *sea ice*. Generally, *lake ice* forms and is destroyed more quickly than *sea ice*, is more brittle and harder than *sea ice*. (2.7)

Difficult area (*Zone difficile* [fr]): A general qualitative expression to indicate, in a relative manner, that the severity of ice conditions prevailing in an area is such that navigation in it is difficult. (12.5)

Diffuse ice edge (*Lisière lâche* [fr]): Poorly defined *ice edge* limiting an area of dispersed ice; usually on the leeward side of an area of *drift ice*. (4.4.8.2)

Dirty ice (*Glace sale* [fr]): Ice that has a mineral or organic content of natural or anthropogenic origin on the surface or in its strata. (8.7)

Diverging (*Divergence* [fr]): *Ice fields* or *floes* in an area are subjected to diverging or dispersive motion, thus reducing ice concentration and/or relieving stresses in the ice. (5.1)

Domed iceberg (*Iceberg en dôme* [fr]): An iceberg which is smooth and rounded on top. (4.3.7.3)

Dried ice (*Glace asséchée* [fr]): *Sea ice* from the surface of which melt-water has disappeared after the formation of *cracks* and *thaw holes*. During the period of drying, the surface whitens. (9.3)

Drift ice / pack ice (*Glace dérivante/banquise* [fr]): Term used in a wide sense to include any area of *sea ice* other than *fast ice* no matter what form it takes or how it is disposed. When *concentrations* are high, i.e. 7/10 or more, *drift ice* may be replaced by the term *pack ice**

*Note: Previously the term pack ice was used for all ranges of concentration. (1.1.2)

Dry-docked iceberg (*Iceberg en U* [fr]): An iceberg which is eroded such that a U-shaped slot is formed near or at water level, with twin columns or pinnacles. This is also referred to as a twinned iceberg. (4.3.7.6)

Easy area (*Zone facile* [fr]): A general qualitative expression to indicate in a relative manner, that ice conditions prevailing in an area are such that navigation in it is not difficult. (12.6)

Fast ice (*Banquise côtière* [fr]): Cf. 3.1 - *Sea ice* which forms and remains fast along the coast, where it is attached to the shore, to an *ice wall*, to an *ice front*, between shoals or grounded *icebergs*. Vertical fluctuations may be observed during changes of sea-level. *Fast ice* may be formed *in situ* from sea water or by freezing of *floating ice* of any age to the shore, and it may extend a few metres or several hundred kilometres from the coast. *Fast ice* may be more than one year old and may then be prefixed with the appropriate age category (*old, second-year, or multi-year*). If it is thicker than about 2 m above sea-level it is called an *ice shelf*. (1.1.1)

Fast ice (*Banquise côtière* [fr]): *Sea ice* which forms and remains fast along the coast, where it is attached to the shore, to an *ice wall*, to an *ice front*, between shoals or grounded *icebergs*. Vertical fluctuations may be observed during changes of sea-level. *Fast ice* may be formed *in situ* from sea water or by freezing of *floating ice* of any age to the shore, and it may extend a few metres or several hundred kilometres from the coast. *Fast ice* may be more than one year old and may then be prefixed with the appropriate age category (*old, second-year, or multi-year*). If it is thicker than about 2 m above sea-level it is called an *ice shelf*. (3.1)

Fast ice boundary (*Ligne de démarcation de la banquise côtière* [fr]): The ice boundary at any given time between *fast ice* and *drift ice*. (4.4.9.1)

Fast-ice edge (*Limite de la banquise côtière* [fr]): The demarcation at any given time between *fast ice* and *open water*. (4.4.8.6)

Few icebergs (*Peu d'icebergs* [fr]): Relates to at least 2 icebergs with 10-44 nautical miles (nm) between icebergs. Bergy bits and growlers occur infrequently. For observations at a point the nearest iceberg is more than 10 nm away, for observations within a polygon 7 or fewer icebergs are observed within circular area of interest of 45 nm radius with 10 nm or more between icebergs, for observations on a lat/lon grid 2-6 icebergs are observed per 1 degree of latitude by 1 degree of longitude grid cell. Recommendation for vessels calls for some maneuvering, reduced speed. (4.2.9.2)

Finger rafted ice (*Glace imbriquée* [fr]): Type of *rafted ice* in which *floes* thrust 'fingers' alternately over and under the other. (8.2.1.2)

Finger rafting (*Chevauchement avec imbrication* [fr]): Type of rafting whereby interlocking thrusts are formed like "fingers" alternately over and under the other. This is commonly found in *nilas* and in *grey ice*. (It was noted that finger rafting in *grey ice* is common in

Antarctica). (6.4.1)

Firn (*Névé* [fr]): Old snow which has recrystallized into a dense material. Unlike ordinary snow, the particles are to some extent joined together; but, unlike ice, the air spaces in it still connect with each other. (10.1)

First-year ice (*Glace de première année* [fr]): *Sea ice* of not more than one winter's growth, developing from *young ice*; thickness 30 cm - 2 m. May be subdivided into *thin first-year ice/white ice*, *medium first-year ice* and *thick first-year ice*. (2.5)

Flaw (*Brèche de séparation* [fr]): A narrow separation zone between *drift ice* and *fast ice*, where the pieces of ice are in chaotic state; it forms when *drift ice* shears under the effect of a strong wind or current along the *fast ice boundary* (cf. *shearing*). (7.1.1.2)

Flaw lead (*Chenal de séparation* [fr]): A passage-way between *drift ice* and *fast ice* which is navigable by surface vessels. (7.3.2)

Flaw polynya (*Polynie de séparation* [fr]): A *polynya* between *drift ice* and *fast ice*. (7.4.2)

Floating ice (*Glace flottante* [fr]): Any form of ice found floating in water. The principal kinds of floating ice are *lake ice*, *river ice*, and *sea ice* which form by the freezing of water at the surface, and *glacier ice (ice of land origin)* formed on land or in an *ice shelf*. The concept includes ice that is stranded or grounded. (1)

Floating-ice motion processes (*Mouvement de la glace flottante* [fr]) (5)

Floe (*Floe* [fr]): Any contiguous piece of *sea ice*. *Floes* are subdivided according to horizontal extent as follows: (4.3.2)

Floe big (*Grand* [fr]): 500-2000 m across. (4.3.2.3)

Floe giant (*Géant* [fr]): Over 10 km across. (4.3.2.1)

Floe medium (*Moyen* [fr]): 100-500 m across. (4.3.2.4)

Floe small (*Petit* [fr]): 20-100 m across. (4.3.2.5)

Floe vast (*Immense* [fr]): 2-10 km across. (4.3.2.2)

Floeberg (*Floeberg* [fr]): A massive piece of *sea ice* composed of a *hummock*, or a group of *hummocks* frozen together, and separated from any ice surroundings. It may typically protrude up to 5 m above sea-level. (4.3.4)

Floe-bit (*Fragment de floe* [fr]): A relatively small piece of *sea ice*, normally not more than 10 m across composed of (a) *hummock(s)* or part of (a) *ridge(s)* frozen together and separated from any surroundings. It typically protrudes up to 2 m above sea-level. (4.3.4.1)

Flooded ice (*Glace inondée* [fr]): *Sea ice* which has been flooded by melt-water or river water and is heavily loaded by water and wet snow. (9.5)

Forms of fast ice (*Différents aspects de la banquise côtière* [fr]) (3)

Forms of floating ice (*Formes des glaces flottantes* [fr]) (4.3)

Fracture (*Fracture* [fr]): Any break or rupture through *very close ice*, *compact ice*, *consolidated ice*, *fast ice*, or a single *floe* resulting from deformation processes. Fractures may contain *brash ice* and/or be covered with *nilas* and/or *young ice*. Length may vary from a few meters to many kilometers. (7.1)

Fracture zone (*Zone de fractures* [fr]): An area which has a great number of *fractures*. (7.2)

Fractures concentration (*Fractures concentration* [fr]): Degree of disunity in an ice area. (7.2.1)

Fracturing (*Formation de fractures* [fr]): Pressure process whereby ice is permanently deformed, and rupture occurs. Most commonly used to describe breaking across *very close ice*, *compact ice* and *consolidated ice*. (6.1)

Frazil ice (*Frasil* [fr]): Fine spicules or plates of ice, suspended in water. (2.1.1)

Friendly ice (*Glace propice* [fr]): From the point of view of the submariner, an ice *canopy* containing many large *skylights* or other features which permit a submarine to surface. There must be more than ten such features per 30 nautical miles (56 km) along the submarine's track. (13.2)

Frost flowers (*Fleurs de givre* [fr]): A growth of ice crystals by condensation from the atmosphere at points on the surface of *young ice*. After formation, sea water may be drawn through the ice into the flowers. These delicate, highly saline crystals effectively roughen the surface, often dramatically altering the appearance of sea ice in microwave remote sensing imagery. (8.8)

Frost smoke (*Brume d'évaporation* [fr]): Fog-like clouds due to contact of cold air with relatively warm water, which can appear over openings in the ice, or leeward of the *ice edge*, and which may persist while ice is forming. (11.3)

Glacier (*Glacier* [fr]): A mass of snow and ice continuously moving from higher to lower ground or, if afloat, continuously spreading. The principal forms of glacier are: inland ice sheets, *ice shelves*, *ice streams*, ice caps, ice piedmonts, cirque glaciers and various types of mountain (valley) glaciers. (10.2.1)

Glacier berg (*Iceberg de glacier* [fr]): Cf. 10.4.2.1 - An irregularly shaped *iceberg*. (4.3.7.1)

Glacier berg (*Iceberg de glacier* [fr]): An irregularly shaped *iceberg*. (10.4.2.1)

Glacier ice (*Glace de glacier* [fr]): Ice in, or originating from, a *glacier*, whether on land or floating on the sea as *icebergs*, *berg bits* or *growlers*. (10.2)

Glacier tongue (*Langue de glacier* [fr]): Projecting seaward extension of a *glacier*, usually afloat. In the Antarctic, *glacier tongues* may extend over many tens of kilometers. (10.2.4)

Grease ice (*Sorbet* [fr]): A later stage of freezing than *frazil ice* when the crystals have coagulated to form a soupy layer on the surface. Grease ice reflects little light, giving the sea a matt appearance. (2.1.2)

Grey ice (*Glace grise* [fr]): *Young ice* 10-15 cm thick. Less elastic than *nilas* and breaks on swell. Usually rafts under pressure. (2.4.1)

Grey-white ice (*Glace blanchâtre* [fr]): *Young ice* 15-30 cm thick. Under pressure more likely to ridge than to raft. (2.4.2)

Grounded hummock (*Hummock échoué* [fr]): Hummocked *grounded ice* formation. There are single grounded *hummocks and lines (or chains) of grounded hummocks*. (3.4.2)

Grounded ice (Glace échouée [fr]): *Floating ice which is aground in shoal water*. (3.4)

Growler (Bourguignon [fr]): Cf. 10.4.5 - *Piece of ice smaller than a bergy bit and floating less than 1 m above the sea surface, a growler generally appears white but sometimes transparent or blue-green in colour. Extending less than 1 m above the sea surface and normally occupying an area of about 20 m², growlers are difficult to distinguish when surrounded by sea ice or in high sea state*. (4.3.7.16)

Growler (Bourguignon [fr]): *Piece of ice smaller than a bergy bit and floating less than 1 m above the sea surface, a growler generally appears white but sometimes transparent or blue-green in colour. Extending less than 1 m above the sea surface and normally occupying an area of about 20 m², growlers are difficult to distinguish when surrounded by sea ice or in high sea state*. (10.4.5)

Hostile ice (Glace hostile [fr]): *From the point of view of the submariner, an ice canopy containing no large skylights or other features which permit a submarine to surface*. (13.3)

Hummock (Hummock [fr]): *A hillock of broken ice which has been forced upwards by pressure. May be fresh or weathered. The submerged volume of broken ice under the hummock, forced downwards by pressure, is termed a bummock*. (8.2.3)

Hummocked ice (Glace hummockée [fr]): *Sea ice piled haphazardly one piece over another to form an uneven surface. When weathered, has the appearance of smooth hillocks*. (8.2.3.2)

Hummocking (Formation de hummocks [fr]): *The pressure process by which sea ice is forced into hummocks. When the floes rotate in the process it is termed screwing*. (6.2)

Ice blink (Halo glaciaire [fr]): *A whitish glare on low clouds above an accumulation of distant ice*. (11.2)

Ice boundary (Ligne de démarcation des glaces [fr]): *The demarcation at any given time between fast ice and drift ice or between areas of drift ice of different concentrations (cf. ice edge)*. (4.4.9)

Ice breccia (Mosaïque de glace [fr]): *Ice of different stages of development frozen together*. (4.3.5)

Ice cake (Glaçon [fr]): *Less than 20 m across*. (4.3.2.6)

Ice canopy (Voûte de glace [fr]): *Drift ice from the point of view of the submariner*. (13.1)

Ice cover (Couverture de glace [fr]): *The ratio of an area of ice of any concentration to the total area of sea surface within some large geographic local; this local may be global, hemispheric, or prescribed by a specific oceanographic entity such as Baffin Bay or the Barents Sea*. (4.1)

Ice edge (Lisière des glaces [fr]): *The demarcation at any given time between the open sea and sea ice of any kind, whether fast or drifting. It may be termed compacted or diffuse (cf. ice boundary)*. (4.4.8)

Ice field (Champ de glace [fr]): *Area of floating ice consisting of any size of floes, which is greater than 10 km across (cf. patch)*. (4.4.1)

Ice front (Falaise de glace [fr]): *The vertical cliff forming the seaward face of an ice shelf or other floating glacier varying in height from 2-50 m or more above sea-level (cf. ice wall)*. (10.3.1)

Ice island (Ile de glace [fr]): Cf. 10.4.3 - *A large piece of floating ice protruding about 5 m above sea-level, which has broken away from an Arctic ice shelf, having a thickness of 30-50 m and an area of from a few thousand sq.m to 500 km² or more, and usually characterized by a regularly undulating surface which gives it a ribbed appearance from the air*. (4.3.7.9)

Ice island (Ile de glace [fr]): *A large piece of floating ice protruding about 5 m above sea-level, which has broken away from an Arctic ice shelf, having a thickness of 30-50 m and an area of from a few thousand sq.m to 500 km² or more, and usually characterized by a regularly undulating surface which gives it a ribbed appearance from the air*. (10.4.3)

Ice island Fragment (Fragment d'île de glace [fr]): Piece of an ice island that has broken away from the main mass. (4.3.7.10)

Ice isthmus (Isthme de glace [fr]): A narrow connection between two ice areas of very close or compact ice. It may be difficult to pass, whilst sometimes being part of a recommended route. (4.4.5.1)

Ice jam (Embâcle [fr]): An accumulation of broken river ice or sea ice not moving due to some physical restriction and resisting to pressure. (4.4.7)

Ice keel (Quille de glace [fr]): From the point of view of the submariner, a downward-projecting ridge on the underside of the ice canopy; the counterpart of a ridge. Ice keels may extend as much as 50 m below sea-level. (13.5)

Ice limit (Limite des glaces [fr]): Climatological term referring to the extreme minimum or extreme maximum extent of the ice edge in any given month or period based on observations over a number of years. Term should be preceded by minimum or maximum (cf. mean ice edge). (4.4.8.3)

Ice massif (Mer de glace [fr]): A variable accumulation of close or very close ice covering hundreds of square kilometers which is found in the same region every summer. (4.4.2)

Ice of land origin (Glacé d'origine terrestre [fr]): Ice formed on land or in an ice shelf, found floating in water. The concept includes ice that is stranded or grounded. (1.2)

Ice of land origin (Glacé d'origine terrestre [fr]) (10)

Ice patch (Banc de glace [fr]): An area of floating ice less than 10 km across. (4.4.1.4)

Ice port (Port de glace [fr]): An embayment in an ice front, often of a temporary nature, where ships can moor alongside and unload directly onto the ice shelf. (12.8)

Ice rafting concentration (Concentration de chevauchement de glace [fr]): Concentration (aerial coverage) of ice rafting in an ice area in tenths. (8.2.1.1)

Ice ridge concentration (Concentration de crête glaciels [fr]): Concentration (aerial coverage) of hummocked ice of all kinds in an ice area in tenths. Up to three values may be given to correspond to the partial concentrations. (8.2.3.1)

Ice rind (Glacé vitrée [fr]): A brittle shiny crust of ice formed on a quiet surface by direct freezing or from grease ice, usually in water of low salinity. Thickness to about 5 cm. Easily broken by wind or swell, commonly breaking in rectangular pieces. (2.2.3)

Ice shelf (Plateau de glace [fr]): A floating ice sheet of considerable thickness showing 2-50 m or more above sea-level, attached to the coast. Usually of great horizontal extent and with a level or gently undulating surface. Nourished by annual snow accumulation and often also by the seaward extension of land glaciers. Limited areas may be aground. The seaward edge is termed an ice front

Ice stream (Coulée de glace [fr]): Part of an inland ice sheet in which the ice flows more rapidly and not necessarily in the same direction as the surrounding ice. The margins are sometimes clearly marked by a change in direction of the surface slope but may be indistinct. (10.2.3)

Ice under pressure (Glacé soumise à pression [fr]): Ice in which deformation processes are actively occurring and hence a potential impediment or danger to shipping. (12.4)

Ice wall (Mur de glace [fr]): An ice cliff forming the seaward margin of a glacier which is not afloat. An ice wall is aground, the rock basement being at or below sea-level (cf. ice front). (10.2.2)

Ice-bound (Bloqué par les glaces [fr]): A harbour, inlet, etc. is said to be ice-bound when navigation by ships is prevented on account of ice, except possibly with the assistance of an icebreaker. (12.2)

Ice-free (Libre de glace [fr]): No ice present. If ice of any kind is present this term should not be used. (4.2.8)

Ice-surface features (Aspects de la surface de la glace [fr]) (8)

Iceberg (Iceberg [fr]): Cf. 10.4.2 - A massive piece of ice of greatly varying shape, protruding more than 5 m above sea-level, which has broken away from a glacier, and which may be afloat or aground. Icebergs may be described as tabular, dome-shaped, sloping, pinnacled, dry-docked, blocky, weathered or glacier bergs in addition to having a size qualifier. (4.3.7)

Iceberg (Iceberg [fr]): A massive piece of ice of greatly varying shape, protruding more than 5 m above sea-level, which has broken away from a glacier, and which may be afloat or aground. Icebergs may be described as tabular, dome-shaped, sloping, pinnacled, weathered or glacier bergs. (10.4.2)

Iceberg risk (Risque d'iceberg [fr]): An area containing glacial ice (known or expected). May be subdivided into isolated icebergs, few icebergs and many icebergs. The area could contain any amount of sea ice. (4.2.9)

Iceberg tongue (Champ d'icebergs échoués [fr]): Cf. 10.4.2.3 - A major accumulation of icebergs projecting from the coast, held in place by grounding and joined together by fast ice. (4.4.10)

Iceberg tongue (Champ d'icebergs échoués [fr]): A major accumulation of icebergs projecting from the coast, held in place by grounding and joined together by fast ice. (10.4.2.3)

Icefoot (Banquette côtière [fr]): A narrow fringe of ice attached to the coast, unmoved by tides and remaining after the fast ice has moved away. (3.2)

Isolated icebergs (Icebergs isolés [fr]): More than 45 nautical miles (nm) to nearest iceberg. Bergy bits and growlers occur infrequently. For observations at a point the nearest iceberg is more than 45 nm away, for observations within a polygon 1 iceberg is observed within circular area of interest of 45 nm radius, for observations on a lat/lon grid 0-1 iceberg is observed per 1 degree of latitude by 1 degree of longitude grid cell. Recommendation for vessels calls for little maneuvering, steady course/speed. (4.2.9.1)

Jammed brash barrier (Barrière due à un embâcle de sarrasins [fr]): A strip or narrow belt of new, young or brash ice (usually 100-5000 m wide) formed at the edge of either drift or fast ice or at the shore. It is heavily compacted mostly due to wind action and may extend 2 to 20 m below the surface but does not normally have appreciable topography. Jammed brash barrier may disperse with changing winds but can also consolidate to form a strip of unusually thick ice in comparison with the surrounding drift ice. This is also known as a windrow in the Baltic Sea. (4.4.8.1.1)

Lake ice (Glace de lac [fr]): Ice formed on a lake, regardless of observed location. (1.3)

Large fracture (Large fracture [fr]): More than 500 m wide. (7.1.5)

Large ice field (Grand champ de glace [fr]): An ice field over 20 km across. (4.4.1.1)

Large iceberg (Gros iceberg [fr]): A piece of glacier ice extending 46 to 75 m above sea level and with a length of 121 to 200 m. (4.3.7.12)

Lead (Chenal [fr]): Any fracture or passage-way through sea ice which is navigable by surface vessels. (7.3)

Level ice (Glace plane [fr]): Sea ice which has not been affected by deformation. (8.1)

Light nilas (Nilas clair [fr]): Nilas which is more than 5 cm in thickness and rather lighter in colour than dark nilas. (2.2.2)

Limit of All Known Ice (Limite de toutes les glaces connues [fr]): The demarcation at any given time between ice-free waters and waters in which sea ice or glacial is confirmed present. (4.4.8.3.1)

Limit of All Significant Ice (Limite de toutes les glaces significatives [fr]): The demarcation at any given time between waters which are either defined as ice free, open water, bergy water, or containing isolated icebergs, and, waters which are defined as few or many icebergs or concentrations of sea ice or glacial ice. (4.4.8.3.2)

Many icebergs (Beaucoup d'icebergs [fr]): Less than 10 nautical miles (nm) between icebergs. Bergy bits and growlers occur. For observations at a point 1 or more icebergs are observed in less than 10 nm, for observations within a polygon 8 or more icebergs are observed within circular area of interest of 45 nm radius with less than 10 nm between icebergs, for observations on a lat/lon grid 7 or more icebergs are observed per 1 degree of latitude by 1 degree of longitude grid cell. Recommendation for vessels calls for frequent maneuvering, low speed. (4.2.9.3)

Marginal Ice Zone (Zone glacière marginale [fr]): The region of an ice cover which is affected by waves and swell penetrating into the ice from the open ocean. (4.4.11)

Mean ice edge (Limite moyenne des glaces [fr]): Average position of the ice edge in any given month or period based on observations over a number of years. Other terms which may be used are mean maximum ice edge and mean minimum ice edge (cf. ice limit and median ice edge). (4.4.8.4)

Median ice edge (Limite médiane des glaces [fr]): Median (50% occurrence) position of the ice edge in any period based on a sufficient number of observations (cf. ice limit and mean ice edge) (4.4.8.5)

Medium first-year ice (Glace moyenne de première année [fr]): First-year ice 70-120 cm thick. (2.5.2)

Medium fracture (Fracture moyenne [fr]): 200 to 500 m wide. (7.1.4)

Medium ice field (Champ de glace moyen [fr]): An ice field 15-20 km across. (4.4.1.2)

Medium iceberg (Iceberg moyen [fr]): A piece of glacier ice extending 16 to 45 m above sea level and with a length of 61 to 120 m. (4.3.7.13)

Medium lake ice (Glace de lac moyenne [fr]): Lake ice that is 15-30 cm in thickness. (2.7.3)

Multi-year ice (Glace de plusieurs années [fr]): Old ice up to 3 m or more thick which has survived at least two summers' melt. Hummocks even smoother than in second-year ice, and the ice is almost salt-free. Colour, where bare, is usually blue. Melt pattern consists of large interconnecting irregular puddles and a well-developed drainage system. (2.6.3)

New ice (Nouvelle glace [fr]): A general term for recently formed ice which includes frazil ice, grease ice, slush and shuga. These types of ice are composed of ice crystals which are only weakly frozen together (if at all) and have a definite form only while they are afloat. (2.1)

New lake ice (Nouvelle glace de lac [fr]): Recently formed lake ice less than 5 cm thick. (2.7.1)

New ridge (Nouvelle crête [fr]): Ridge newly formed with sharp peaks and slope of sides usually 40°. Fragments are visible from the air at low altitude. (8.2.2.1)

Nilas (Nilas [fr]): A thin elastic crust of ice, easily bending on waves and swell and under pressure, thrusting in a pattern of interlocking 'fingers' (finger rafting). Has a matt surface and is up to 10 cm in thickness. May be subdivided into dark nilas and light nilas. (2.2)

Nip (Presser [fr]): Ice is said to nip when it forcibly presses against a ship. A vessel so caught, though undamaged, is said to have been nipped. (12.3)

Occurrence of floating ice (Occurrence de glace flottante [fr]) (4)

Old ice (Vieille glace [fr]): Sea ice which has survived at least one summer's melt; typical thickness up to 3m or more. Most topographic features are smoother than on first-year ice. May be subdivided into residual, second-year ice and multi-year ice. (2.6)

Open ice (Glace lâche [fr]): Floating ice in which the ice concentration is 4/10 to 6/10, with many leads and polynyas, and the floes are generally not in contact with one another. (4.2.4)

Open water (Eau libre [fr]): A large area of freely navigable water in which sea ice is present in concentrations less than 1/10. No ice of land origin is present. (4.2.6)

Openings in the ice (Ouvertures dans les glaces [fr]) (7)

Pancake ice (Glace en crêpes [fr]): Predominantly circular pieces of ice from 30 cm - 3 m in diameter, and up to about 10 cm in thickness, with raised rims due to the pieces striking against one another. It may be formed on a slight swell from grease ice, shuga or slush or as a result of the breaking of ice rind, nilas or, under severe conditions of swell or waves, of grey ice. It also sometimes forms at some depth at an interface between water bodies of different physical characteristics, from where it floats to the surface; its appearance may rapidly cover wide areas of water. (2.3)

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Pinnacled iceberg (Iceberg pointu [fr]): An iceberg with a central spire or pyramid, with one or more spires. (4.3.7.5)

Polynya (Polynie [fr]): Any non-linear shaped opening enclosed in ice. Polynyas may contain brash ice and/or be covered with new ice, nilas or young ice. (7.4)

Puddle (Mare [fr]): An accumulation on ice of melt-water, mainly due to melting snow, but in the more advanced stages also to the melting of ice. Initial stage consists of patches of melted snow. (9.1)

Rafted ice (Glace empilée ou entassée [fr]): Type of deformed ice formed by one piece of ice overriding another (cf. finger rafting). (8.2.1)

Rafting (Chevauchement des glaces [fr]): Pressure processes whereby one piece of ice overrides another. Most common in new and young ice (cf. finger rafting). (6.4)

Ram (Eperon [fr]): An underwater ice projection from an ice wall, ice front, iceberg or floe. Its formation is usually due to a more intensive melting and erosion of the unsubmerged part. (8.4)

Recurring polynya (Polynie récurrente [fr]): A polynya, which recurs in the same position every year. (7.4.3)

Residual ice (Glace résiduelle [fr]): First-year ice that has survived the summer's melt and is now in the new cycle of growth. It is 30 to 180 cm thick depending on the region where it was in summer. After 1 January (in the Southern hemisphere after 1 July), this ice is called second-year ice. (2.6.1)

Ridge (Crête [fr]): A line or wall of broken ice forced up by pressure. May be fresh or weathered. The submerged volume of broken ice under a ridge, forced downwards by pressure, is termed an ice keel. (8.2.2)

Ridged ice (Glace tourmentée [fr]): Ice piled haphazardly one piece over another in the form of ridges or walls. Usually found in first-year ice (cf. ridging). (8.2.2.6)

Ridged ice zone (Zone de glace tourmentée [fr]): An area in which much ridged ice with similar characteristics has formed. (8.2.2.6.1)

Ridging (Formation de crêtes [fr]): The pressure process by which sea ice is forced into ridges. (6.3)

River ice (Glace de rivière [fr]): Ice formed on a river, regardless of observed location. (1.4)

Rotten ice (Glace pourrie [fr]): Sea ice which has become honeycombed and which is in an advanced state of disintegration. (9.4)

Rubble field (Champ de blocaille [fr]): An area of extremely deformed sea ice of unusual thickness formed during the winter by the motion of drift ice against, or around a protruding rock, islet or other obstruction. (8.2.3.3)

Sastrugi (Sastrugi [fr]): Sharp, irregular ridges formed on a snow surface by wind erosion and deposition. On drift ice the ridges are parallel to the direction of the prevailing wind at the time they were formed. (8.6.2)

Sea ice (Glace de mer [fr]): Any form of ice found at sea which has originated from the freezing of sea water. (1.1)

Second-year ice (Glace de deuxième année [fr]): Old ice which has survived only one summer's melt; typical thickness up to 2.5 m and sometimes more. Because it is thicker than first-year ice, it stands higher out of the water. In contrast to multi-year ice, summer melting produces a regular pattern of numerous small puddles. Bare patches and puddles are usually greenish-blue. (2.6.2)

Shear ridge (Crête de cisaillement [fr]): An ice ridge formation which develops when one ice feature is grinding past another. This type of ridge is more linear than those caused by pressure alone. (8.2.2.7)

Shear ridge field (Champ de cisaillement [fr]): Many shear ridges side by side. (8.2.2.7.1)

Shearing (Cisaillement [fr]): An area of drift ice is subject to shear when the ice motion varies significantly in the direction normal to the motion, subjecting the ice to rotational forces. These forces may result in phenomena similar to a flaw (q.v.). (5.3)

Shore ice ride-up (Chevauchement de glace sur les berges [fr]): A process by which ice is pushed ashore as a slab. (6.5)

Shore lead (Chenal côtier [fr]): A lead between drift ice and the shore or between drift ice and an ice front. (7.3.1)

Shore melt (Cordon d'eau littoral [fr]): Open water between the shore and the fast ice, formed by melting and/or as a result of river discharge. (9.6)

Shore polynya (Polynie côtière [fr]): A polynya between drift ice and the coast or between drift ice and an ice front. (7.4.1)

Shuga (Shuga [fr]): An accumulation of spongy white ice lumps, a few centimetres across; they are formed from grease ice or slush and sometimes from anchor ice rising to the surface. (2.1.4)

Sky and air indications (Indices de glace dans le ciel et dans l'atmosphère [fr]) (11)

Skylight (Claire-voie [fr]): From the point of view of the submariner, thin places in the ice canopy, usually less than 1 m thick and appearing from below as relatively light, translucent patches in dark surroundings. The undersurface of a skylight is normally flat. Skylights are called large if big enough for a submarine to attempt to surface through them (120 m), or small if not. (13.6)

Sloping iceberg (Iceberg biseauté [fr]): An iceberg which is rather flat on top and with steep vertical sides on one end, sloping to lesser sides on the other end. (4.3.7.4)

Slush (Gadoue [fr]): Snow which is saturated and mixed with water on land or ice surfaces, or as a viscous floating mass in water after a heavy snowfall. (2.1.3)

Small fracture (Fracture étroite [fr]): 50 to 200 m wide. (7.1.3)

Small ice cake (Petit glaçon [fr]): Less than 2 m across. (4.3.2.7)

Small ice field (Petit champ de glace [fr]): An ice field 10-15 km across. (4.4.1.3)

Small iceberg (Petit Iceberg [fr]): A piece of glacier ice extending 5 to 15 m above sea level and with a length of 15 to 60 m. (4.3.7.14)

Snow cover concentration (Concentration de glace recouverte de neige [fr]): Concentration (aerial coverage) of snow-covered ice in an ice area in tenths. (8.6.1)

Snow Ice (Glace de neige [fr]): Ice formed by refreezing flooded snow creating an ice layer that bonds firmly to the top surface of a floe. (2.8)

Snow-covered ice (Glace recouverte de neige [fr]): Ice covered with snow. (8.6)

Snowdrift (Congère [fr]): An accumulation of wind-blown snow deposited in the lee of obstructions or heaped by wind eddies. A crescent-shaped snowdrift, with ends pointing down-wind, is known as a snow barchan. (8.6.3)

Stages of melting (Phases de la fonte [fr]) (9)

Standing floe (Floe dressé [fr]): A separate floe standing vertically or inclined and enclosed by rather smooth ice. (8.3)

Stranded ice (Glace jetée en côte [fr]): Ice which has been floating and has been deposited on the shore by retreating high water. (3.4.1)

Strip (Cordon (de glace) [fr]): Long narrow area of floating ice, about 1 km or less in width, usually composed of small fragments detached from the main mass of ice, and run together under the influence of wind, swell or current. (4.4.5)

Tabular berg (Iceberg tabulaire [fr]): Cf. 10.4.2.2 - A flat-topped iceberg. Most tabular bergs form by calving from an ice shelf and show horizontal banding (cf. ice island). (4.3.7.2)

Tabular berg (Iceberg tabulaire [fr]): A flat-topped iceberg. Most tabular bergs form by calving from an ice shelf and show horizontal banding (cf. ice island). (10.4.2.2)

Terms relating to submarine navigation (Termes relatifs à la navigation sous-marine [fr]) (13)

Terms relating to surface shipping (Termes relatifs à la navigation de surface [fr]) (12)

Thaw holes (Trous de fonte [fr]): Vertical holes in sea ice formed when surface puddles melt through to the underlying water. (9.2)

Thick first-year ice (Glace épaisse de première année [fr]): First-year ice over 120 cm thick. (2.5.3)

Thick lake ice (Glace de lac épaisse [fr]): Lake ice that is 30-70 cm in thickness. (2.7.4)

Thin first-year ice / white ice (Glace mince de première année/glace blanche [fr]): First-year ice 30-70 cm thick. (2.5.1)

Thin first-year ice / white ice first stage (Glace mince de première année/glace blanche, premier stade [fr]): 30-50 cm thick. (2.5.1.1)

Thin first-year ice / white ice second stage (Glace mince de première année/glace blanche, deuxième stade [fr]): 50-70 cm thick. (2.5.1.2)

Thin lake ice (Glace de lac mince [fr]): Lake ice that is 5-15 cm in thickness. (2.7.2)

Tide crack (Fissure de marée [fr]): Crack at the line of junction between an immovable ice foot or ice wall and fast ice, the latter subject to rise and fall of the tide. (7.1.1.1)

Tongue (Langue (de glace) [fr]): A projection of the ice edge up to several kilometers in length, caused by wind or current. (4.4.4)

Very close ice (Glace très serrée [fr]): Floating ice in which the concentration is 9/10 to less than 10/10. (4.2.2)

Very large iceberg (Très gros iceberg [fr]): A piece of glacier ice extending more than 75 m above sea level and with a length of more than 200 m. (4.3.7.11)

Very open ice (Glace très lâche [fr]): Floating ice in which the concentration is 1/10 to 3/10 and water preponderates over ice. (4.2.5)

Very small fracture (Fracture très étroite [fr]): 1 to 50 m wide. (7.1.2)

Very thick lake ice (Glace de lac très épaisse [fr]): Lake ice that is greater than 70 cm in thickness. (2.7.5)

Very weathered ridge (Crête très érodée [fr]): Ridge with tops very rounded, slope of sides usually 20-30°. (8.2.2.3)

Water sky (Ciel d'eau [fr]): Dark streaks on the underside of low clouds, indicating the presence of water features in the vicinity of sea ice. (11.1)

Weathered iceberg (Iceberg érodé [fr]): An iceberg that shows marked signs of deterioration from the effects of atmosphere and ocean. (4.3.7.8)

Weathered ridge (Crête érodée [fr]): Ridge with peaks slightly rounded and slope of sides usually 30° to 40°. Individual fragments are not discernible. (8.2.2.2)

Weathering (Erosion [fr]): Processes of ablation and accumulation which gradually eliminate irregularities in an ice surface. (6.6)

Young coastal ice (Jeune glace côtière [fr]): The initial stage of fast ice formation consisting of nilas or young ice, its width varying from a few metres up to 100-200 m from the shoreline. (3.1.1)

Young ice (Jeune glace [fr]): Ice in the transition stage between nilas and first-year ice, 10-30 cm in thickness. May be subdivided into grey ice and grey-white ice. (2.4)