
EXPERT TEAM ON SEA ICE – FIFTH SESSION

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STEERING GROUP FOR THE PROJECT
GLOBAL DIGITAL SEA ICE DATA BANK (GDSIDB) –
THIRTEENTH SESSION

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PROPOSED REVISION OF COLOUR CODING AND TERMINOLOGY FOR BERGY WATER

Summary and Purpose of Document

Most ice centres normally define the ice edge as the boundary between icefree/open/bergy waters and ice infested areas characterized by ice concentration of 1/10th or more. This is a widely used practice but often the terminology is insufficient in certain high risk sea areas with significant glacial ice outside the ice edge. The term “Bergy Water” is a very “wide” term covering the range from very infrequent icebergs to 1/10 concentration of icebergs. The presence of icebergs is a significant safety issue for all ships since all icebergs in open sea are dropping smaller bergs, bergy bits and growlers often drifting many nautical miles. Large grounded icebergs may disintegrate partly or fully without any notice. Icebergs, bergy bits and growlers must be circumnavigated at safe distance. Waters with clusters of glacial ice will typically be avoided by ships or eventually navigated at slower speed.

ACTION PROPOSED

The Team is invited to:

- (a) review and discuss current iceberg terminology, symbology, color coding and ice center practice for mapping ice features between the ice edge and ice free waters;
 - (b) review and discuss current ice centre usage of ice edge definition including automated products from various satellites for export to icecharts, NAVTEX, GMDSS etc.;
 - (c) Provide guidance on refining the term “bergy water” and provide guidance to definitions to “Limit of All Known Ice” and “Limit of All Ice (estimate)”;
 - (d) Consider submission of revised definition of “bergy water”, change of color coding and eventually submission of definition of “Limit of All Known Ice”, Limit of All Significant Ice” and “Limit of All Ice (estimate)”.
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References: WMO/TD-No.1215 Ice Chart Color Code Standards
WMO/TD-No.259 Volume 1

DISCUSSION

1. The term “bergy water” is proposed “downgraded” to include less glacial ice.

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

2. In the old definition 1/10 of glacial ice is a major hazard for shipping although the revised term still allows ice centres continue current practice and other ice centres to refine the mapping of ice hazards (ice symbols) outside the ice edge. Proposal for changed symbology for glacial ice submitted separately.

3. Proposed future safety “ranking” of freely navigable waters:

- 1) Ice free
- 2) Open water
- 3) Bergy water
- 4) Few icebergs
- 5) Many icebergs

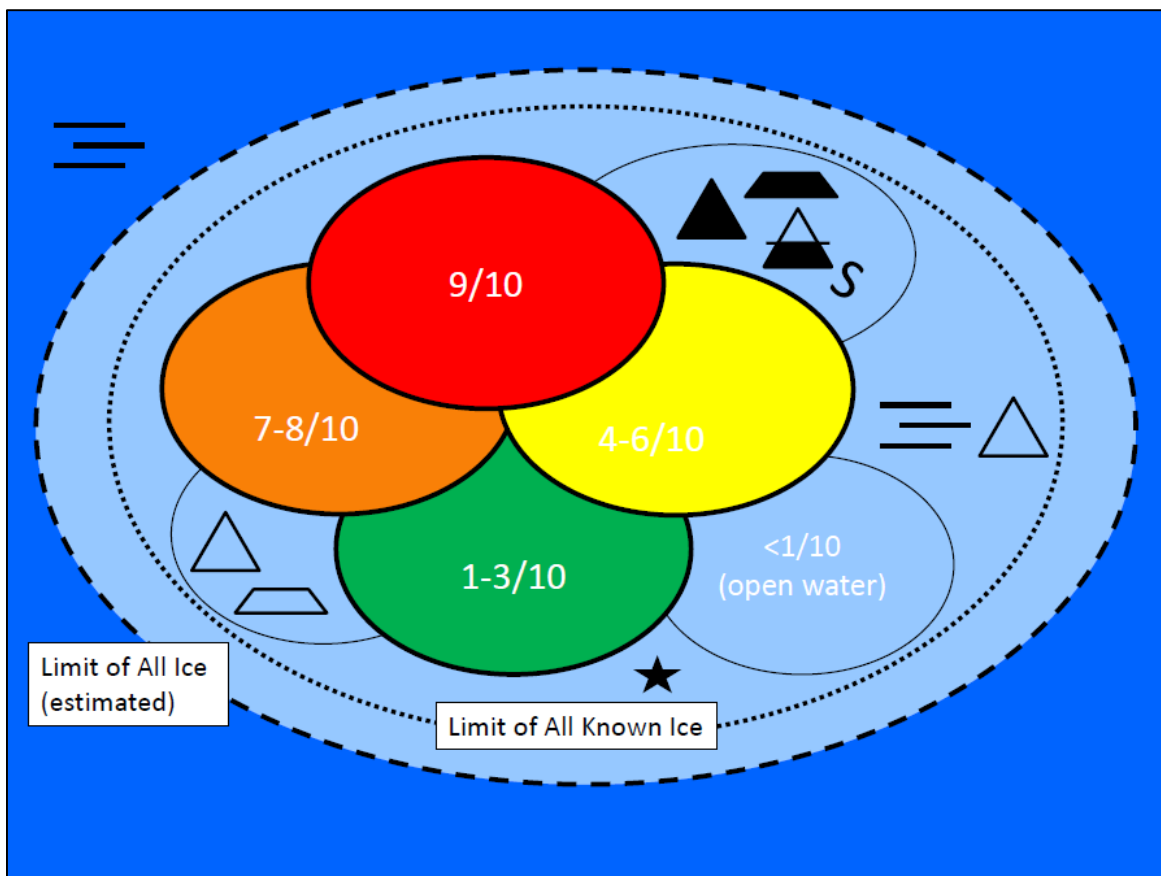
4. Proposed definitions of

Limit of All Known Ice: The demarcation at any given time between ice free waters and waters in which sea ice or glacial is confirmed present.

Limit of All Significant Ice: The demarcation at any given time between waters which are either defined as ice free, open water, bergy water, *and*, waters which are defined as few or many icebergs or concentrations of sea ice or glacial ice.

Limit of All Ice (estimate): The demarcation at any given time between ice free waters and waters in which sea ice or glacial is confirmed or expected present. (the limit may be identical to the limit of all known ice but a safety/practical approach due the satellite resolution cut-off could be the “Limit of All Known Ice + 30 nm”)

5. Sketch “ice chart” for support of Team discussions:



6. Current definitions of Open Water, Bergy Water and Ice edge:

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)

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)

Ice edge: The demarcation at any given time between open water or bergy water or ice free and sea ice in concentrations greater than $1/10$, whether fast or drifting. It may be termed compacted or diffuse.