



Brief on: Important areas for polar bear (*Ursus maritimus*) denning, concerning operations related to mineral activities.

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## **Update of areas for polar bear denning areas**

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### **Background**

The document *Rules for field work and reporting regarding mineral resources* ('Field Rules') (Anon., 2000) provides special provisions for field work related to mineral activities. The provisions are applied to activities within areas and periods of particular significance to wildlife.

The areas and provisions in the Field Rules are defined based on the existing biological knowledge of the time. Government of Greenland has requested a revision of Field Rules' chapter 2 and 3 including report and digital map to be available in NatureMap at [www.eamra.gl](http://www.eamra.gl) ([naturemap.eamra.gl](http://naturemap.eamra.gl)). NatureMap is an online mapping portal for environment and nature of Greenland. Information from NatureMap can be viewed in NunaGIS and GovMin (Licence-Map) as direct data link service.

This brief is an update and supplement to the text of chapter 2 section 2.03.07 *Areas with breeding dens for polar bears*.

**Ad. 1: General description and sensitivity**

The Greenland population of polar bears (*Ursus maritimus*) on the national Red List is assessed as ‘Vulnerable’ (VU) (Boertmann & Bay, 2018). It is not allowed to disturb, including digging out, denning polar bears under Government of Greenland Executive Order no. 3 of 14<sup>th</sup> September 2018 on catch and protection of polar bears (Anon., 2018) §3.

It is advised to change the title from ‘Areas with breeding dens for polar bears’ to ‘Polar bear denning areas’. This is to reflect that the section aims to protect hibernating female polar bears pregnant or with cubs in the specific period. The breeding period is from March to June, however not restricted to certain areas or connected to hibernation (Born et al. 1997, Wiig 2003, Laidre et al. 2015, Escajeda et al. 2018, Laidre et al. 2018, Laidre and Stirling 2020).

**Ad. 2: Periods of importance**

It is advised not to allow disturbance, including digging out, of denning polar bears following the Executive Order. Encounters of denning polar bears are more likely in the general areas of importance (Ad. 3), and operators should stay vigilant within the areas of importance during the sensitive periods and follow the terms in Field Rules (November 2000) chapter 2.02.

In the Field Rules (November 2000) the following period is listed as sensitive:

1. During the period October 1 – March 31.

The period is still covering the denning period according to the available biological knowledge (Born et al. 1997, Wiig 2003, Laidre et al. 2015, Escajeda et al. 2018, Laidre et al. 2018, Laidre and Stirling 2020).

**Ad. 3: Areas of importance**

Revised polar bear denning areas are presented in Figure 1. Previous areas are presented in Figure 2 for reference. The changes are based on available knowledge of polar bear core distribution areas in the coastal regions of Greenland and the behavior of polar bear females during maternity denning and choice of typical locations as well as telemetry data from field work campaigns.

In October, the pregnant female generally finds a suitable location for digging a den in the snow. The dens are often located on land on a steep slope (surveys in the 2000’s recorded slopes between 5 and 35°). The slopes are primarily facing south in the elevation range of 0 to 1400 m, 4 to 15 km away from the coast. This is to keep cubs safe from attacking males in spring when the female is hunting seals on the sea ice. Denning choice can also depend on snow drift and snow availability. Dens can also be located offshore on fast ice and at icebergs frozen into the sea ice, and as such depend on changes in sea ice cover during the denning period (Escajeda, E. et al, 2018, Laidre, K. et al, 2015).

The areas are outlined from the core distribution areas in coastal areas. The mapped areas are general, and a detailed study of topography and den habitat characteristics has not been performed. It is advised to do such analyses in case of extensive mineral resource activities in the sensitive period.

For the region named Ikeq (Køge Bugt) and the neighboring fjords between Tasiilaq and Ittilivartiip Kangertivala Kiammut Kangia (Kap Møsting), there are no recent satellite telemetry data recordings to show presence of denning activity. The area is a coastal feeding and core area for polar bears and is connected to recorded denning areas to the north and south of similar topographic properties. The area is regarded as a probable important denning area, but not documented, and hence, not included in map.

It is advised to change the regulations of the section in the field rules to the following:

*2.03.07 Polar bear denning areas. During the period October 1 – March 31, the following regulations apply, unless approved by the Environmental Agency for Mineral Resources and Activities:*

- a. It is not allowed to cause disturbance, including firing guns or traveling by boat at speeds above 8 knots.*
- b. It is not allowed to fly by fixed-wing plane or helicopter within a vertical distance of 500 meters.*
- c. It is not allowed to fly drones within a vertical or horizontal distance of 100 meters.*
- d. Traffic on land is not allowed when polar bear is observed.*

**Updated map of important areas for polar bear denning**

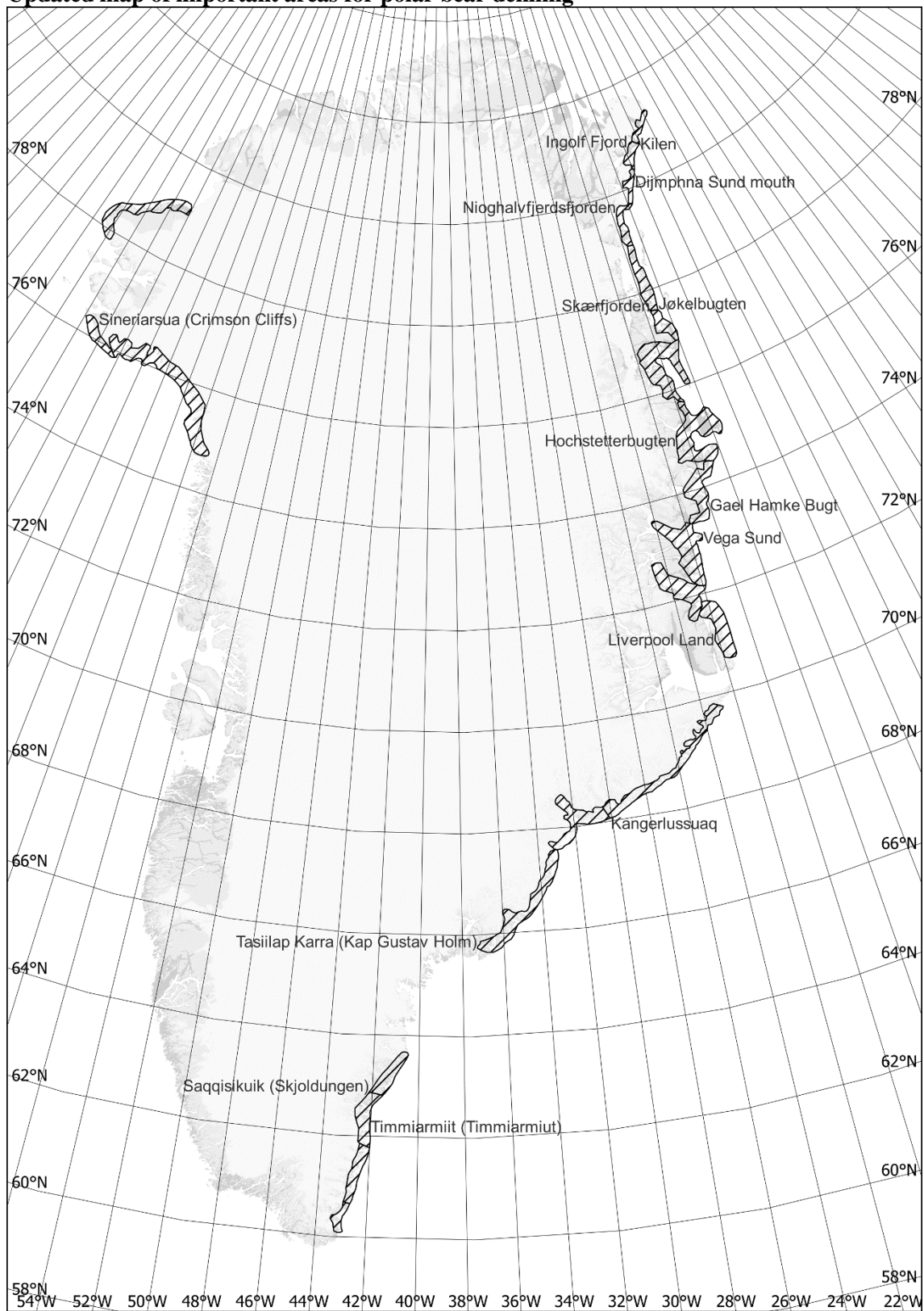


Figure 1: Updated regions of Polar bear denning areas. November 2021.



**Previous map of important areas for polar bear denning**

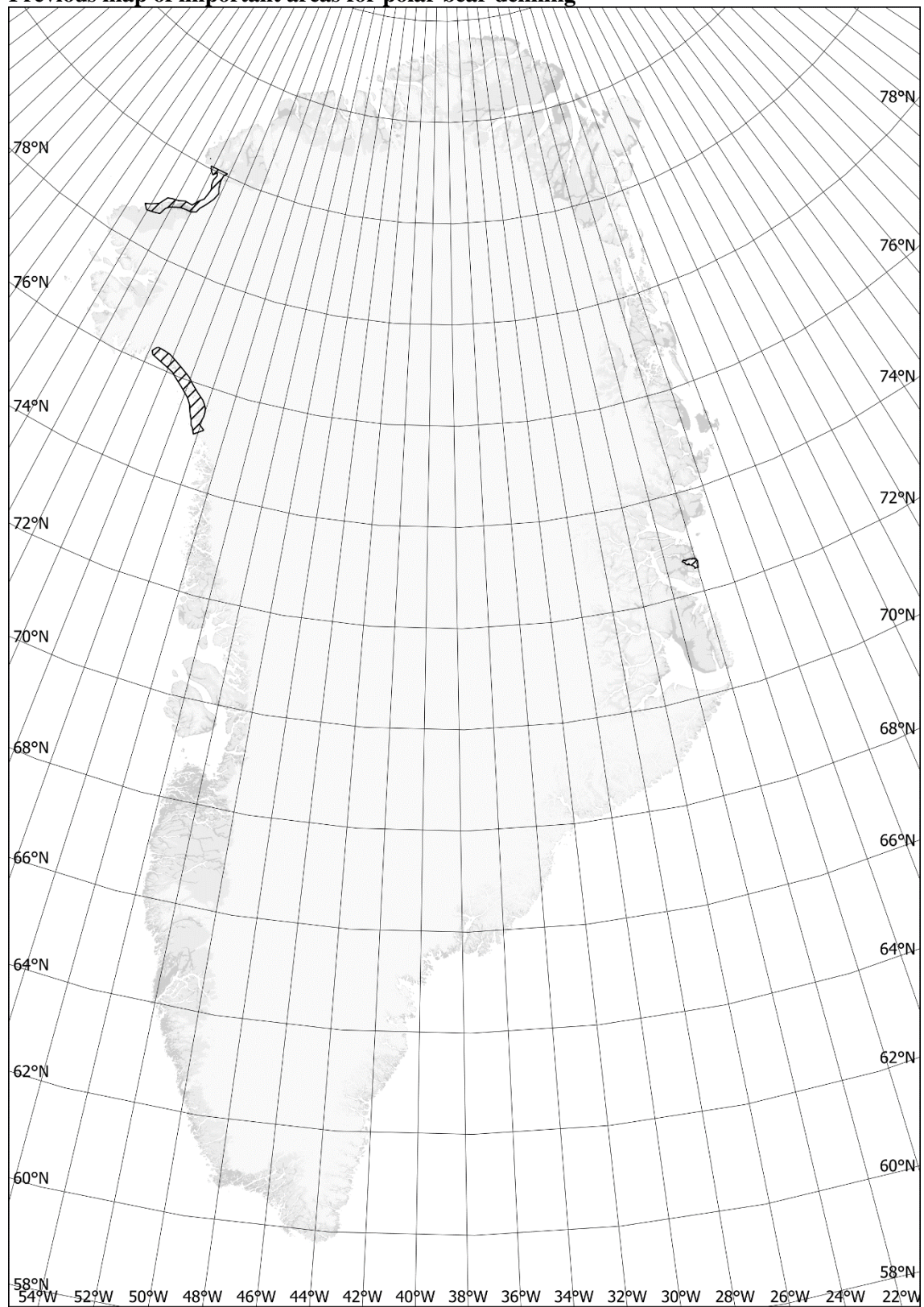


Figure 2: Previous regions of Polar bear maternity denning areas in Field Rules, November 2000.

## References

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