Circumpolar Arctic Vegetation Classification

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Purpose

A hierarchy of vegetation maps at plot to circumpolar scales with consistent legend approaches is needed for understanding the Arctic as a single global geo-ecosystem with common geographical, climatic, cultural, political and economic issues that unite it (Fig. 1).

Scope

The Arctic Tundra Biome as portrayed by the Circumpolar Arctic Vegetation Map (CAVM Team 2003, Walker et al. 2005, Fig. 2).

These regions are dominated by treeless tundra vegetation consisting of various combinations of herbaceous plants, dwarf shrubs (<40 cm tall), low shrubs (40-200 cm tall), bryophytes and lichens.

Classification at the plot scale

The CAVM displays the dominant zonal vegetation within five Arctic bioclimate subzones (A–E, from north to south, Fig. 2), as well as the dominant zonal vegetation within mountain and wetland complexes. The CAVM classification includes 15 phytosociological vegetation units (Table 1), the names of which are based on the dominant plant growth forms (Table 1). A full description of an example CAVM map unit is shown in Table 2 from the backside of the map.

A hierarchy of maps and legends at circumpolar to plot scales

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Classification at the circumpolar scale

The CAVM displays the dominant zonal vegetation within five Arctic bioclimate subzones (A–E, from north to south, Fig. 2), as well as the dominant zonal vegetation within mountain and wetland complexes. The CAVM classification includes 15 phytosociological vegetation units (Table 1), the names of which are based on the dominant plant growth forms (Table 1). A full description of an example CAVM map unit is shown in Table 2 from the backside of the map.

Summary

Vegetation classification of the circumpolar Arctic Tundra Biome is a priority project of Conservation of Arctic Flora and Fauna. Recent rapid advancements in large international vegetation databases and information systems now make the creation of a circumpolar vegetation archive and classification possible, along with their application to nature conservation and policy making. A recently published protocole for Arctic Alaska uses the Braun-Blanquet (Br.-Bl.) classification approach, with zonal and habitat-type based grouping of syntaxa, similar to the approach used in the European Vegetation Classification. Vegetation scientists from around the circumpolar Arctic are meeting at ASAV 2017 to take the next step toward a circumpolar Arctic Vegetation Classification.

References

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