Summary

Dalton, Garneau and Melton present PDD-Can-1, the first national-scale compilation of peat-depth measurements for Canada. The database contains almost 90,000 basal peat-depth survey points drawn from almost 900 sources, including government reports, research publications, and environmental impact assessments. An additional dataset detailing over 400,000 survey points where peat is absent is also included for comparison. A considerable amount of work went into digitizing and georeferencing historical hand-drawn peatland survey maps, many of which are made available in digital form for the first time, and into recovering peat-depth data from the soil and borehole components of EIAs, a source rarely used in peatland science. The manuscript is clearly written, describes the compilation approach, presents an interesting timeline of peatland investigation in Canada, and is candid about the limitations of the data, including coordinate precision, inconsistent definitions of the peat–mineral interface, the age of some measurements and the spatial gaps in coverage. This dataset fills an important gap and will be of direct value for peatland mapping, carbon stock estimation and model validation, and the authors should be commended for the scale of the effort. My comments below are mostly requests for clarification: some wording around peatland classification, the potential bias introduced by excluding deeper measurements from EIA and Ducks Unlimited data, some inconsistencies in the time periods used in the text and figures, and whether the database will be maintained in future. I recommend minor revisions.

Abstract

Line 34: Swamps can also be peatlands, as arguably can marshes under some classification systems (not one I personally agree with, but it does exist). To avoid this wording generating a classification controversy, it may be simpler to state that a classification of land cover or peatland type was not included. This would also apply to the ‘no peat’ locations.

Introduction

Line 38: I was surprised that this section does not mention that peatlands represent long-term carbon sinks because of their ability to accumulate organic matter. I realize this may not hold for all peatlands at present, but where there is peat, they have been sinks historically.

Literature Review

Line 74: It sounds like industry reports were included through the Impact Assessment Registry. It would be helpful to add wording that makes this clearer.

Quality Control

Lines 124–129: Could the removal of EIA survey points deeper than 220 cm, bias the dataset toward shallower peat and result in an underestimation of peat depth in some regions? It is currently unclear what proportion of the peat depths in a given area comes from which source. This would be a concern if industry were to use these shallower values for decision making when

they reflect a bias in data selection. It would be helpful to report how many points were excluded for this reason and to discuss how this affects the comparison shown in Figure 8.

Timelines

The time periods used in the figures do not always match those used in the text. For example, Section 4.2 spans 1970 to 1990, but the Figure 5 caption states 1979 to 1990. Section 4.3 covers 2005 to present day, but the Figure 8 caption describes the EIA data as starting in the mid-1990s. The Figure 8 caption also places the second inventory period between 1970 and 1980, whereas Section 4.2 gives 1970 to 1990. Please make these consistent.

General Comment

Do the authors intend to update the database as new data become available? If so, please describe how future versions will be released (e.g., new DOIs or versioning) and who will maintain them. If not, please state that it is a static release.