



Peatland Restoration – Case of Canada

Pete Whittington
Line Rochefort
*Advising on peatland
restoration in China - 2016*



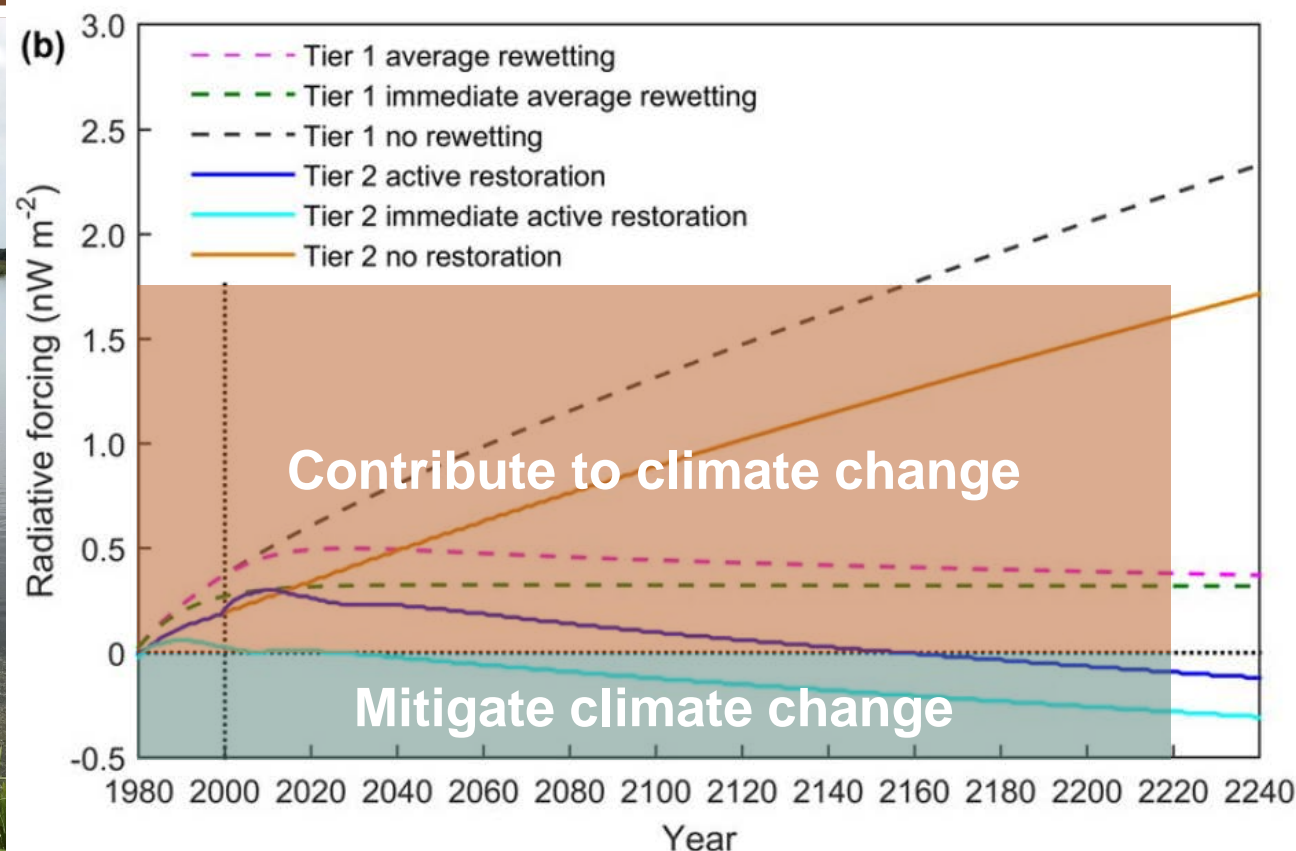
Rewetting does not return drained fen peatlands to their old selves

Prompt active restoration of peatlands substantially reduces climate impact

Europe



North America



In North America...

Started small and worked our way up in scaling up



Spore germination



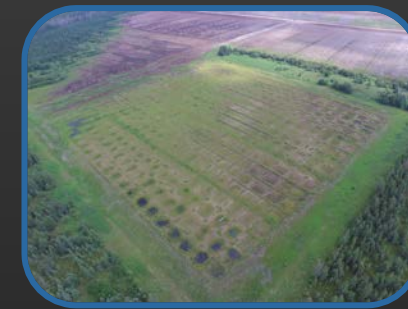
Survival trials



Propagation



Field plot trials



Large-scale Manitoba > 60 ha

1991

1992

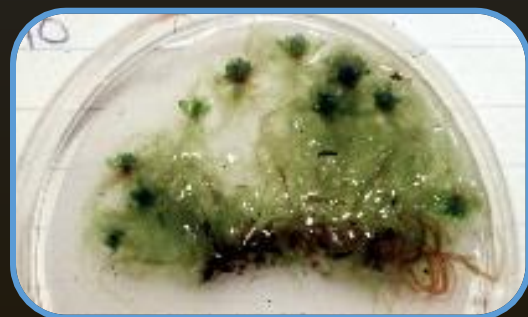
1993-1996

1995-1999

2000

2016-2021

Fragment regeneration



Survival trials



Field plot trials

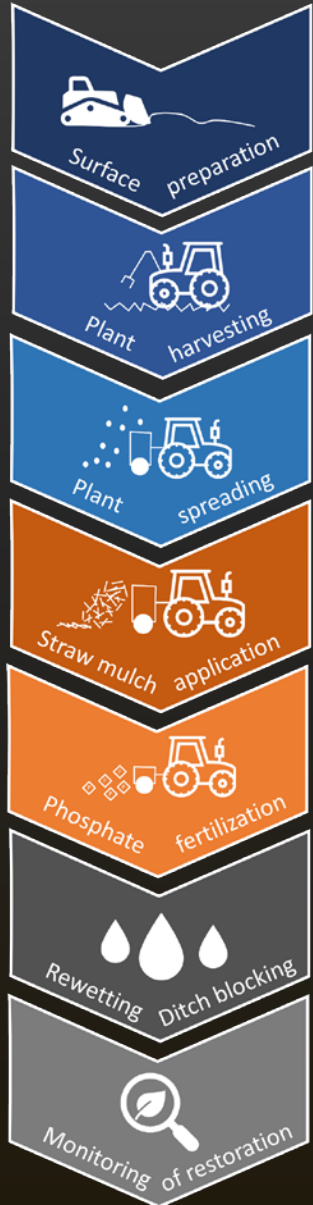


Large-scale 8 ha



Meanwhile in North America...

Moss Layer Transfer Technique as a peatland restoration method



15 years post-restoration



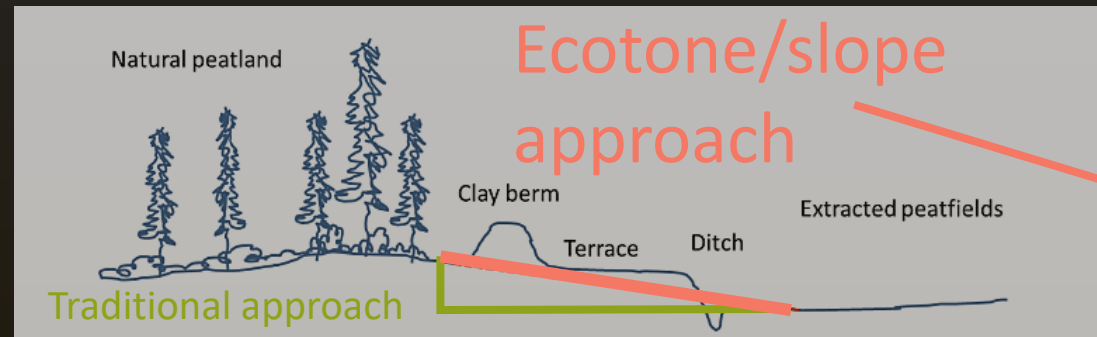
In western Canada... What's next for 2021-2026



Ecotone restoration - To encourage the flow of water and nutrients

Larger scales in Western Manitoba

- Drier and windier climate
- Fen restoration



Guidelines for the Restoration of *Sphagnum*-dominated peatlands 3rd edition (2020)

Peatland Restoration Guide Planning Restoration Projects



Peatland Restoration Guide Site Preparation and Rewetting



Peatland Restoration Guide Plant Material Collecting and Donor Site Management



Peatland Restoration Guide Spreading Plant Material, Mulch and Fertilizer



Implementation of MLTT in North America



Drivers of success in 53 cutover bogs restored by a moss layer transfer technique

E. González*, L. Rochefort



5 to 10 yrs
post-restoration

82% of
success if the
goal is vascular
plant **diversity**

68% of
success if the
goal is **C**
sequestration

High success
if the goal is
**no invasive
species**

Since 1999 in Canada

MLTT restoration

1827 ha

+

Active rewetting
Without flooding

1491 ha

+

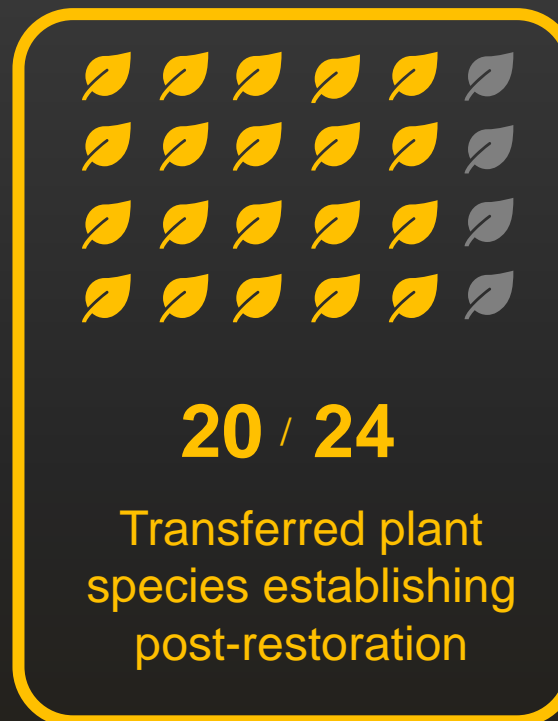
250 ha+

in Minnesota and many
projects planned

Recovery of ecological attributes of the restored peatlands



Nugent et al. 2018, Nugent et al. 2019



Hugron et al. 2020



MLTT restored
peatlands

**Fire resistant
and short-
term resilient**

Blier-Langdeau et al. 2021

Sphagnum regeneration in
donor sites in
5 to 10 years



Guêné-Nanchen et al. 2018



Denmark



Poland



Lithuania



Canada



Latvia



USA, Minnesota

MLTT
Sphagnum moss
reintroduction to jump-
start peat accumulation
processes

& more (Chile, Australia)



Estonia

Thank you !

Invitations

Canada 2023: Reclaim, Restore, Rewild Conference, in collaboration with the IPS



China 2024: 17th International Peatland Congress

**To see the latest world effort in
peatland restoration**

