

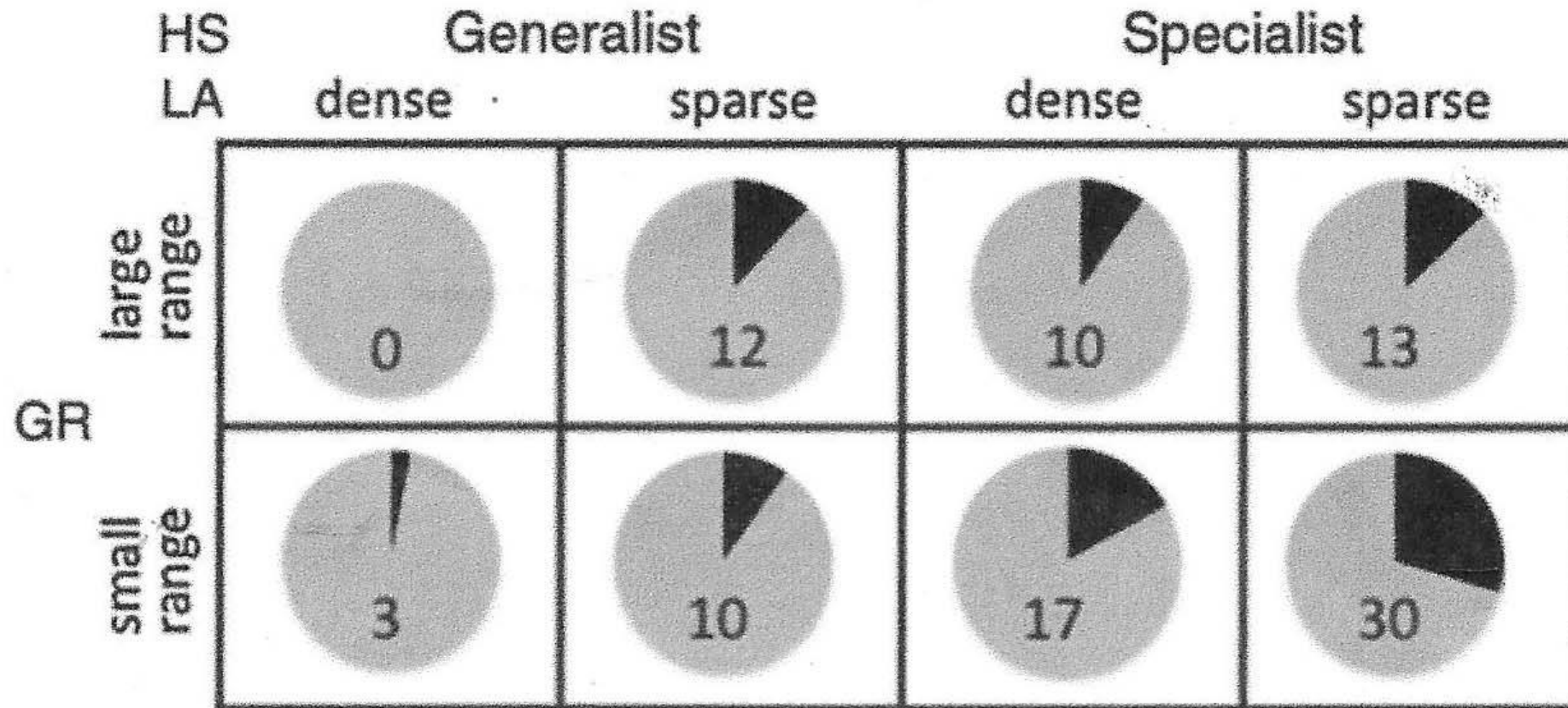
Rare Species as the Guides for Restoration Success

Nick Hill, Fern Hill Institute for Plant Conservation

David Garbary and Jennifer Poirier, Saint Francis Xavier University



the majority of rare plants are specialists



Rabinowitz, 1981. Seven forms of rarity. In Synge, The biological aspects of rare plant conservation. Wiley
Espeland, E.K. and T.M.Emam. 2011. The value of structuring rarity...Biodiversity Conservation 20: 963-985



Sabatia kennedyana: dense, small range, specialist



Neottia bifolia: sparse, large range, specialist



Geum peckii : scattered, small range, specialist



rarity as the indicator of habitat quality

a) Plymouth gentian on large watershed area lakes, unlike common coastal plain species, is excluded from reservoirs and enriched lakeshores





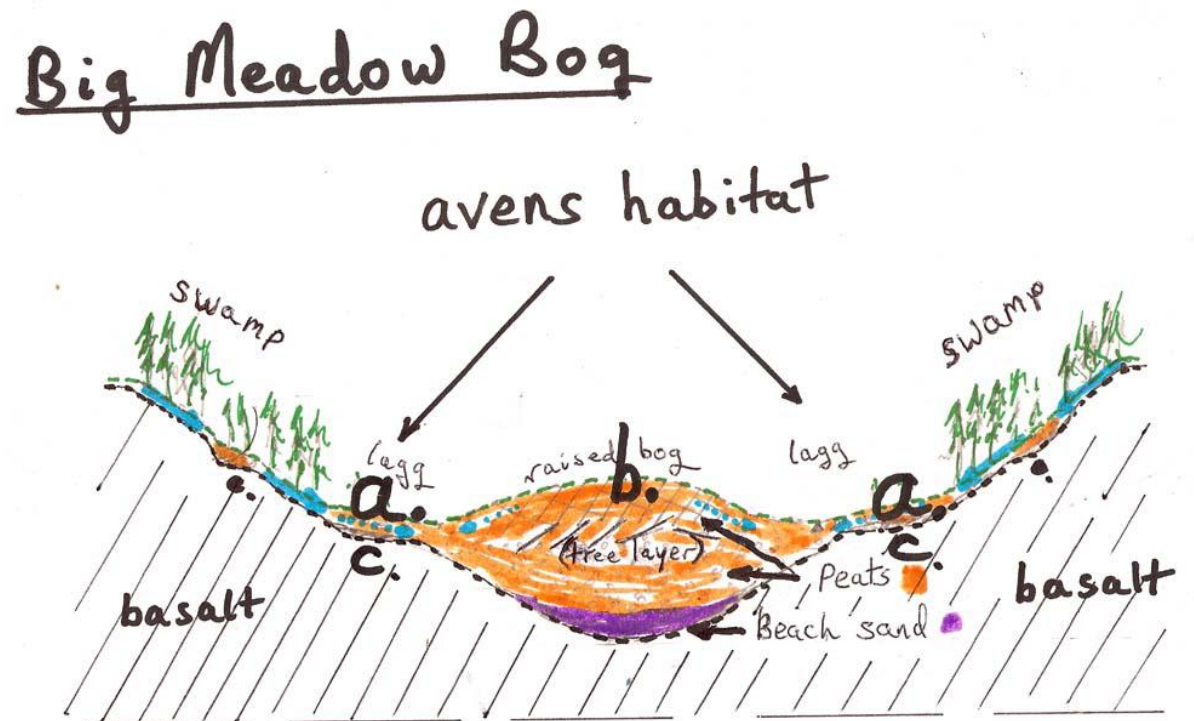
rarity as the indicator of habitat quality

b) southern twayblade in healthy, sphagnum/black spruce swamps, alone disappeared from edge impacted swamps

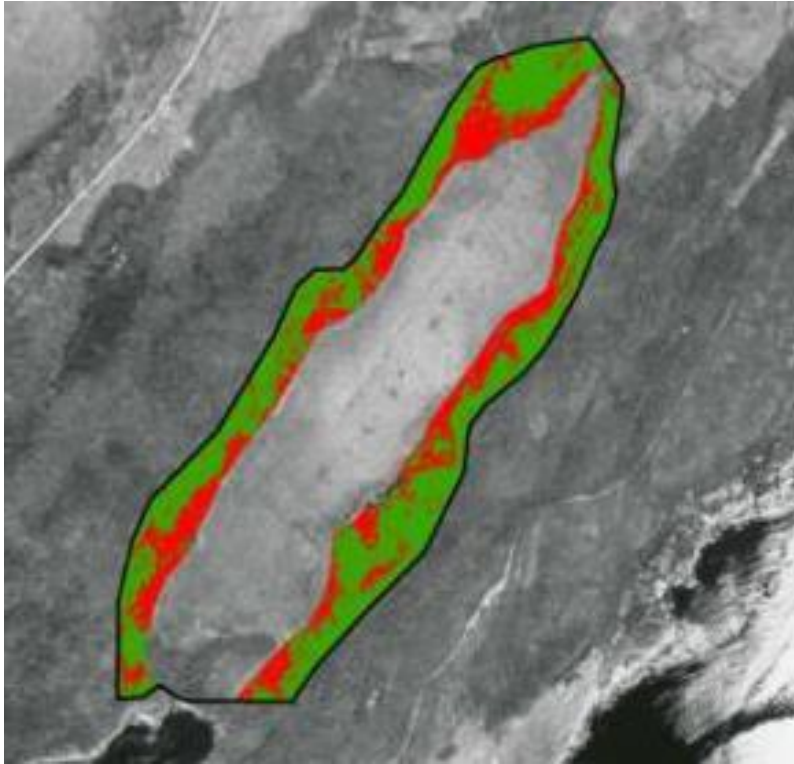


rarity as the indicator of habitat quality

c) eastern mountain avens is found in two geographical locations, on one peninsula in Canada, cooled by Fundy upwelling, in low biomass peatlands on basalt, particularly in lagg positions



reduction in most critical habitat, the open lagg, following ditching



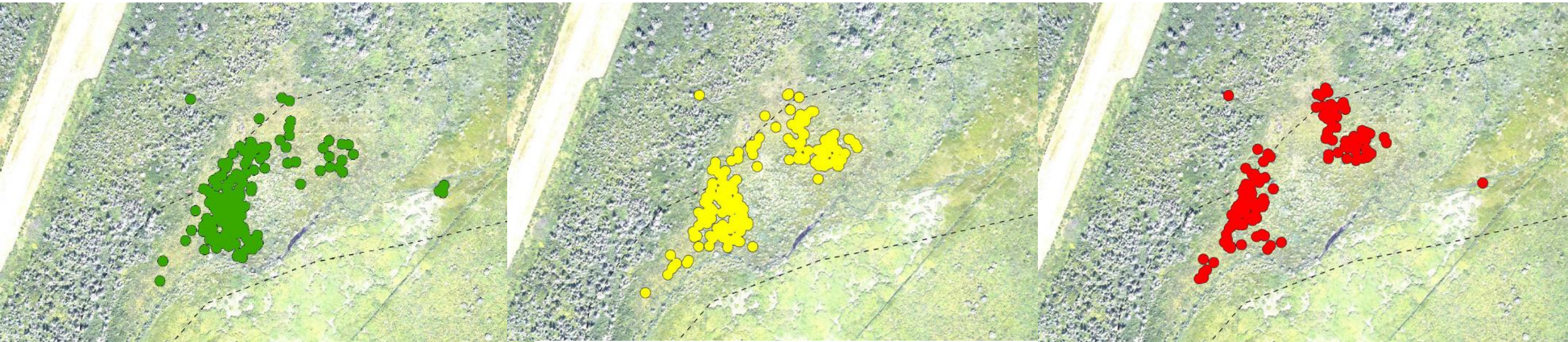
1955- Pre-Ditched



2015-55 years ditched

* red = open, green = treed (Brad Toms MTRI, 2015)

ditching brought gulls and these spill over into the northwest lagg



2012

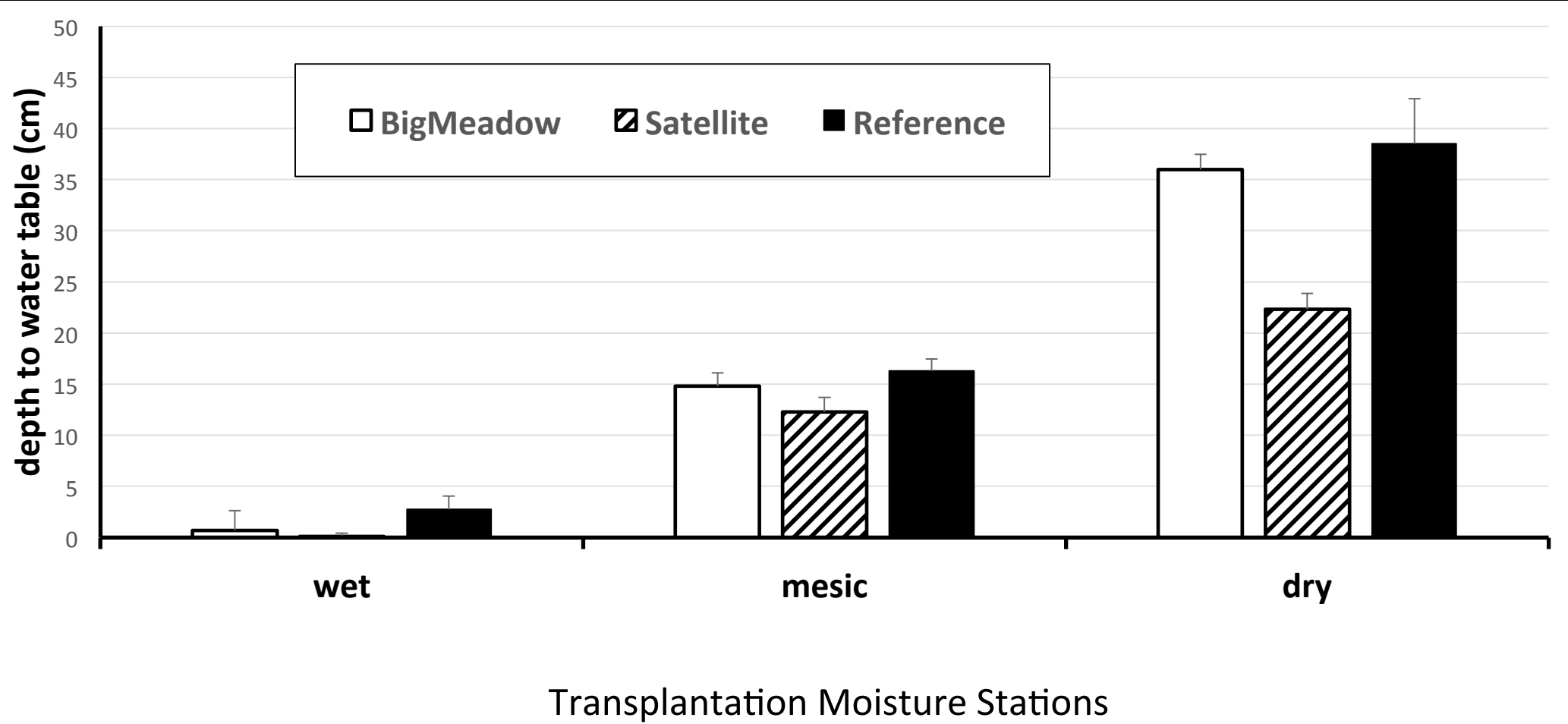
2013

2015

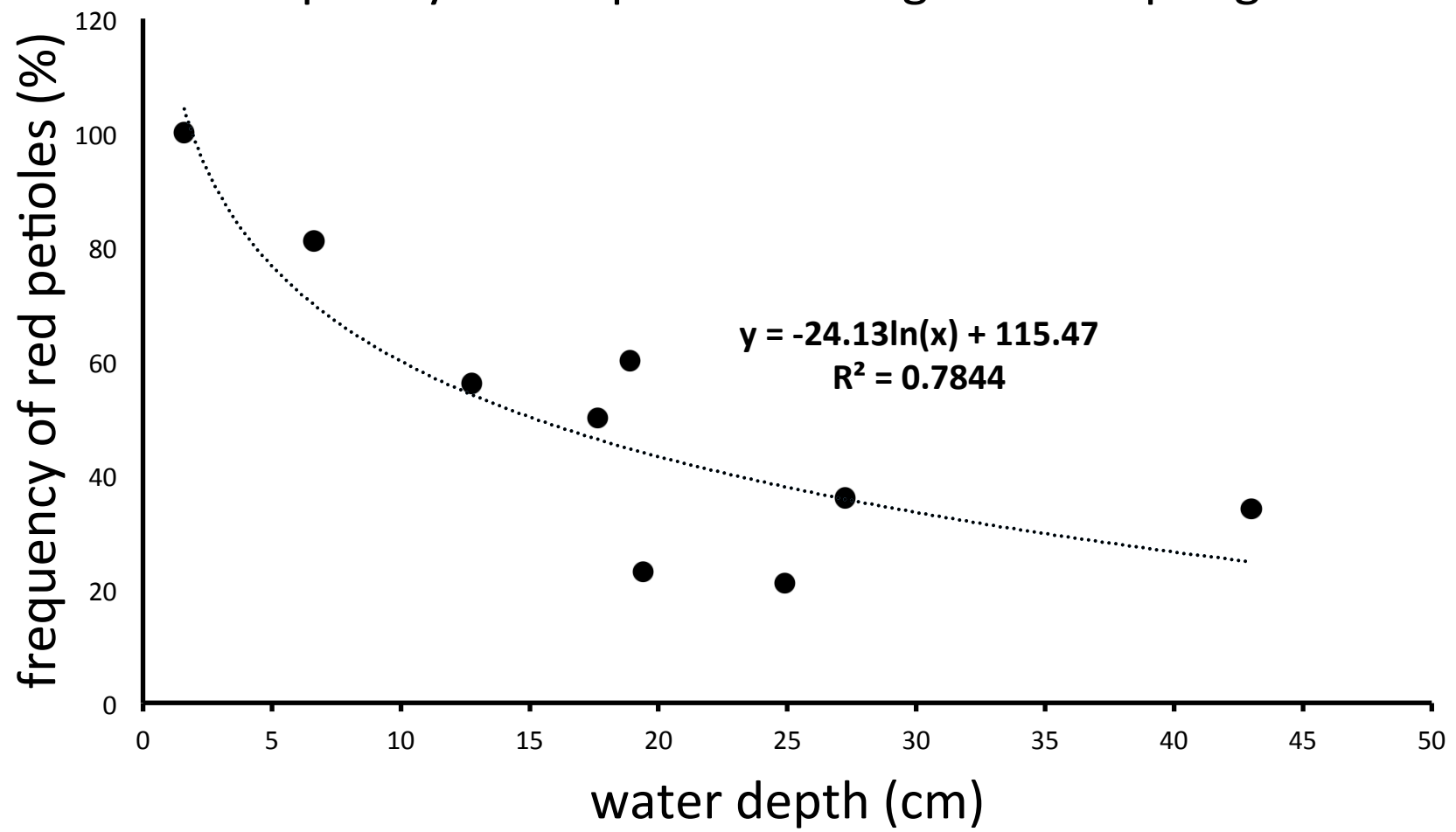
enrichment caused loss of avens over three years

how specialist..how plastic..is avens?
used vulnerable avens to understand tolerance range
and risk to avens given restoration scenarios

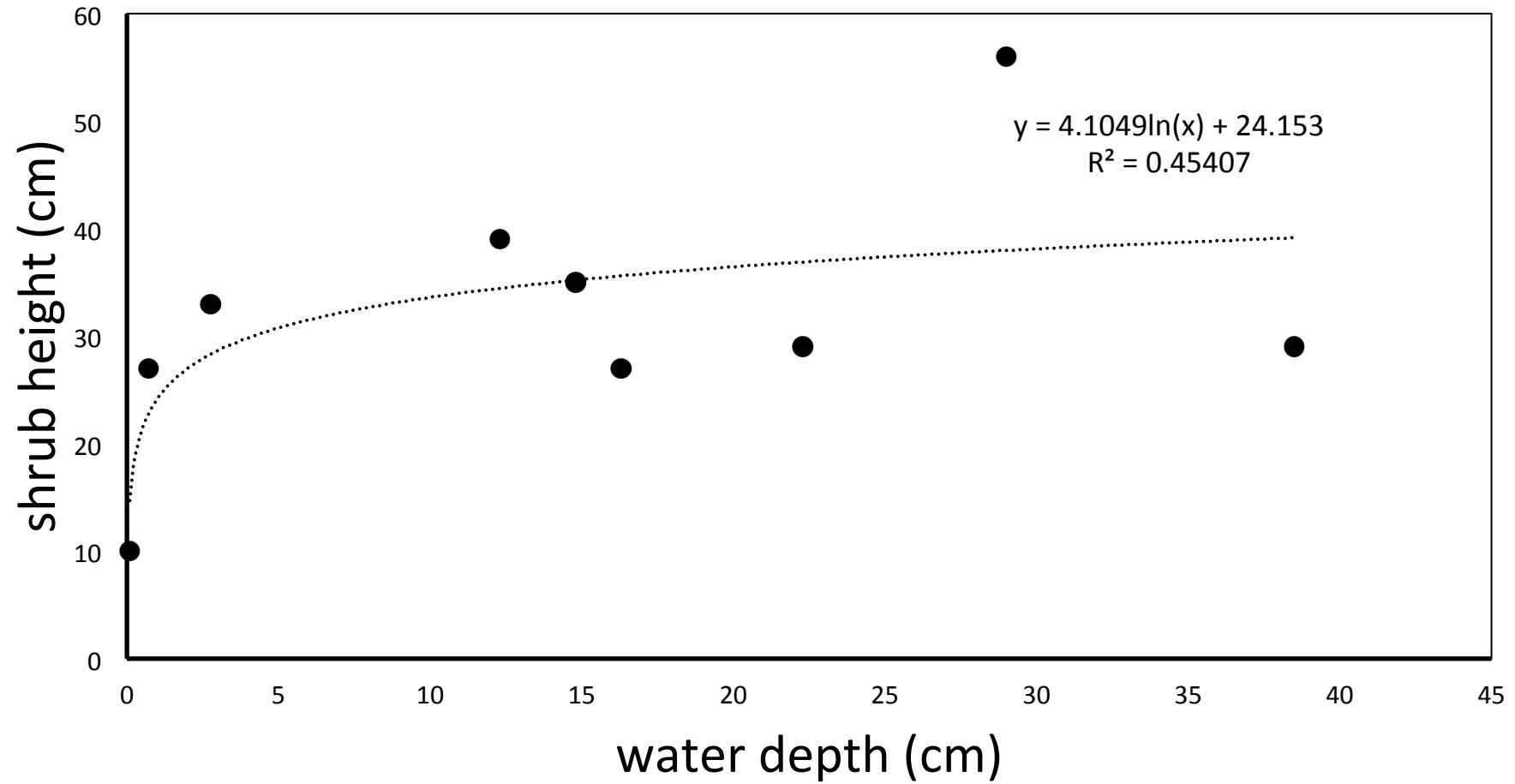




frequency of red petioles along water depth gradient



shrub height as function of fall water depth



*** avens at limit of stress tolerance..it dies in lagg pools**

*** limit of avens set by competition**

avens as the indicator of lagg quality: “Beauty Bog”

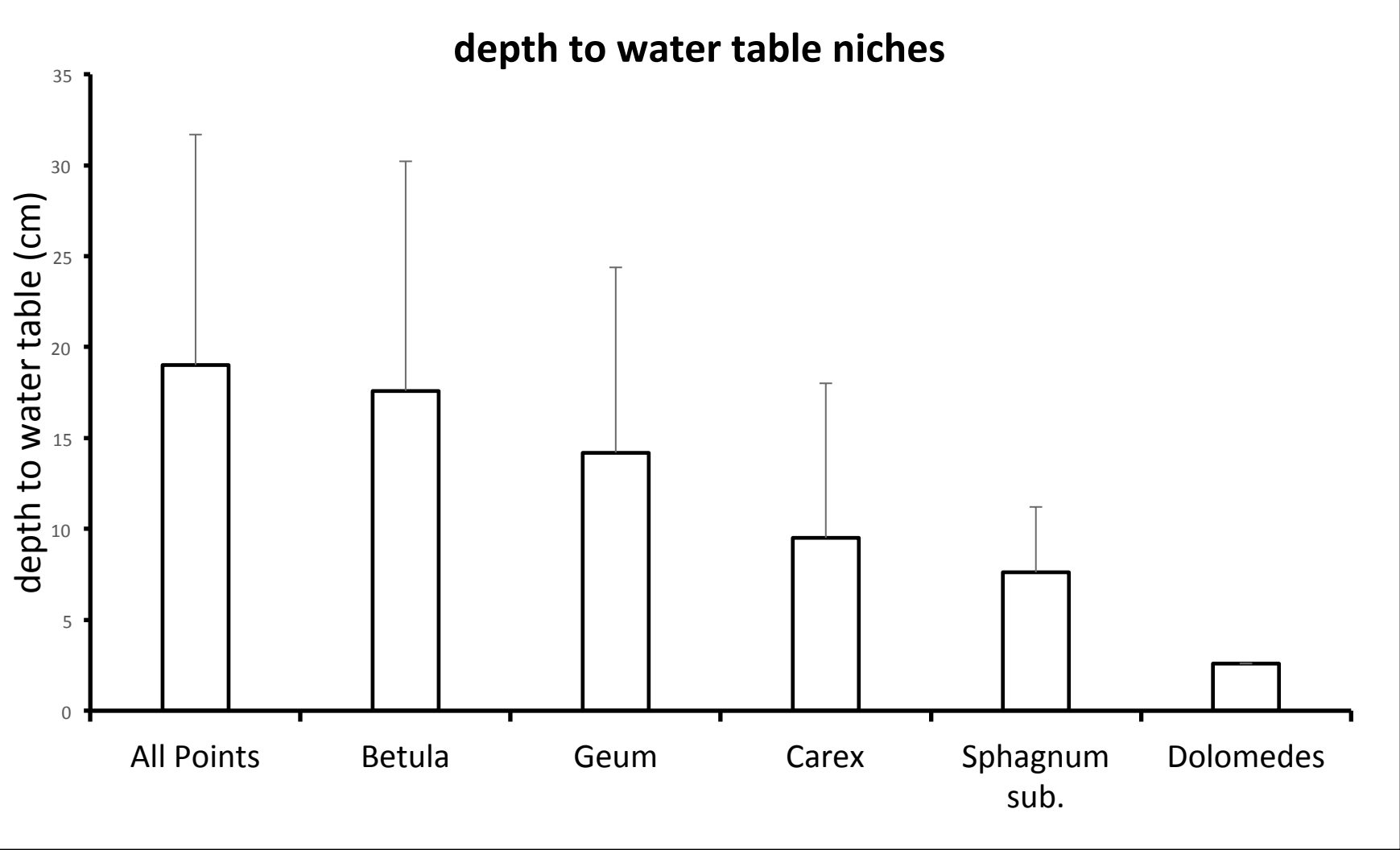


--water level

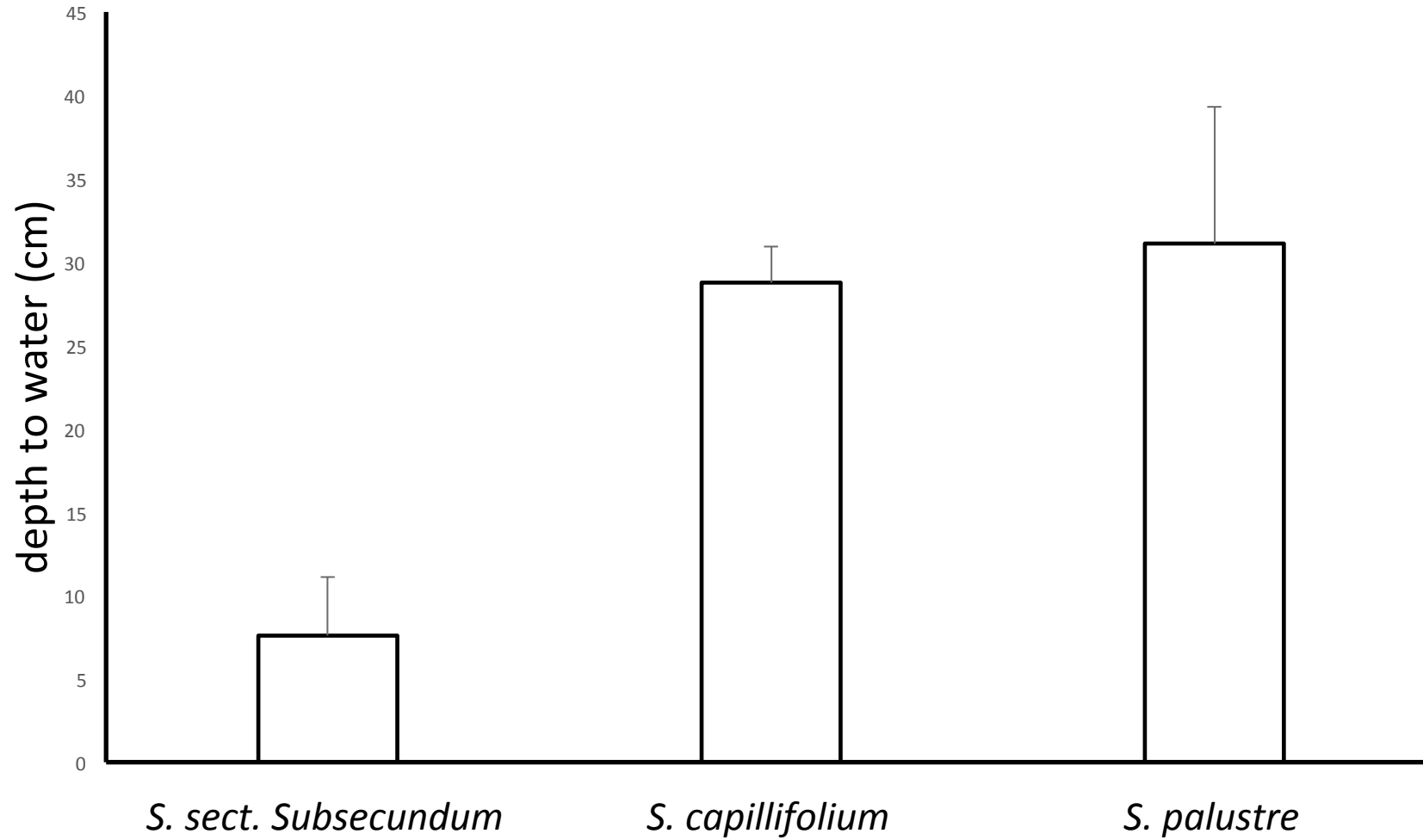
--water quality and enrichment

--shrub cover

--shrub height

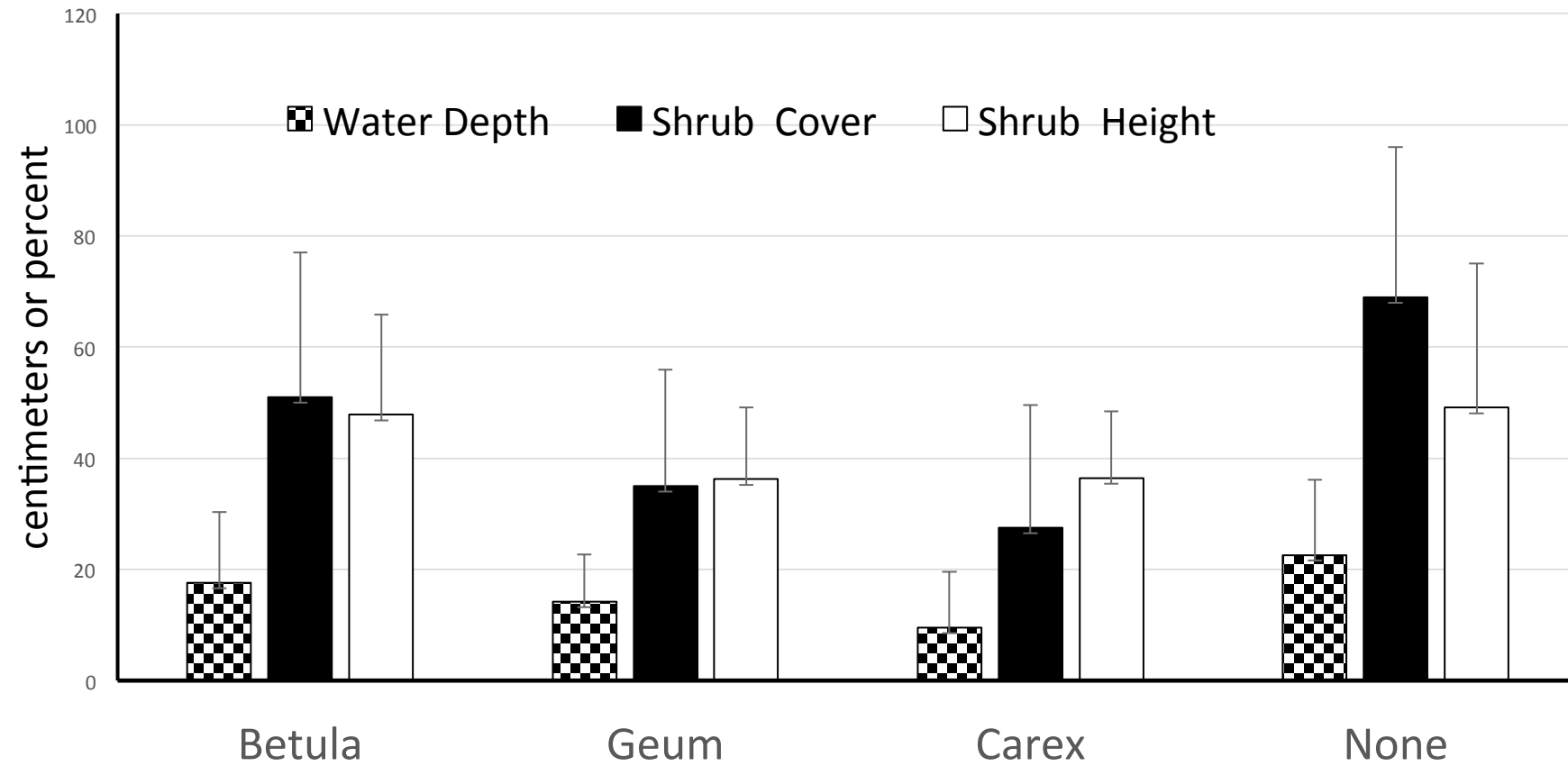


Sphagnum capitulum heights above water table



The fishing spider, *Dolomedes striatus* and *Sphagnum carolinianum* (?)

realized niches at Beauty Bog



restoration of lagg and pool landscape and three possible indicators of success



many make it possible

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David Colville—Geographer, NSCC, AGRG, Bridgetown campus

Dr. David Burton—Soil scientist, Dalhousie University

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Roger Outhouse, Bay of Fundy Discovery Centre

Danny Kenney, Kenney Fishery

David Tudor, councillor of Municipality of Digby council



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