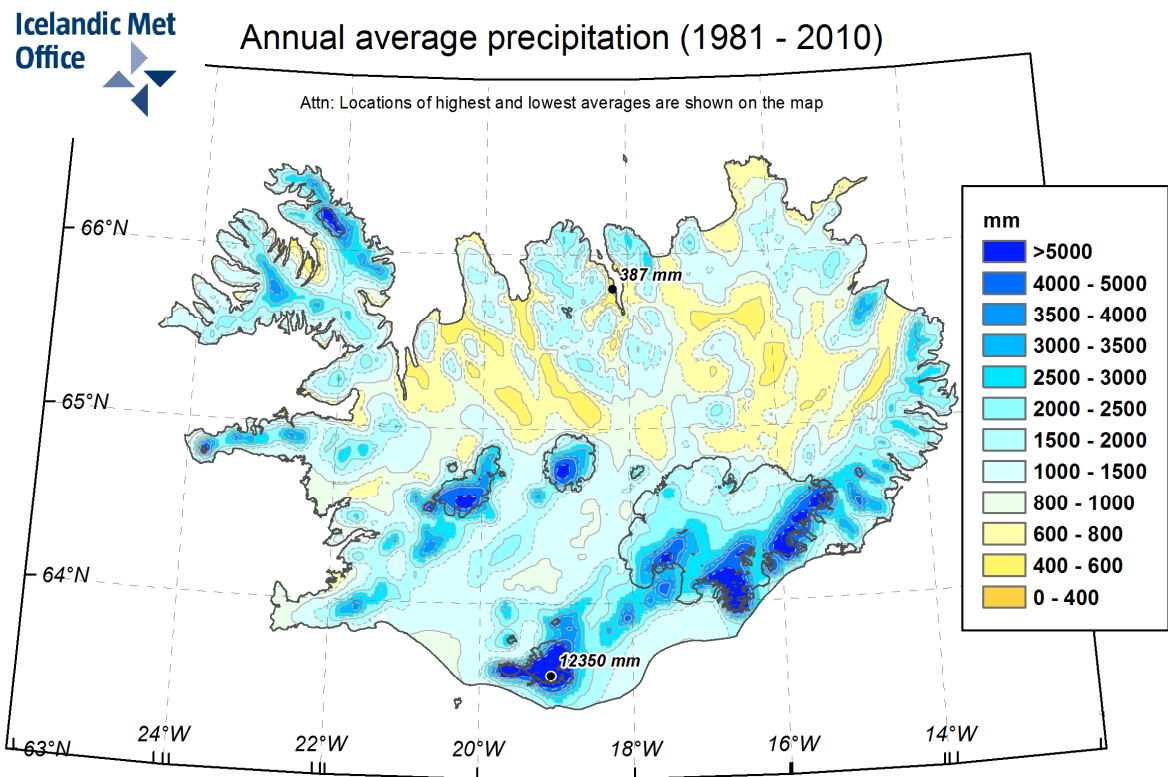




## Groundwater – WFD and the first ideas of Iceland's approach

Gerður Stefánsdóttir & Davíð Egilson, Vaasa 2019

# Annual precipitation

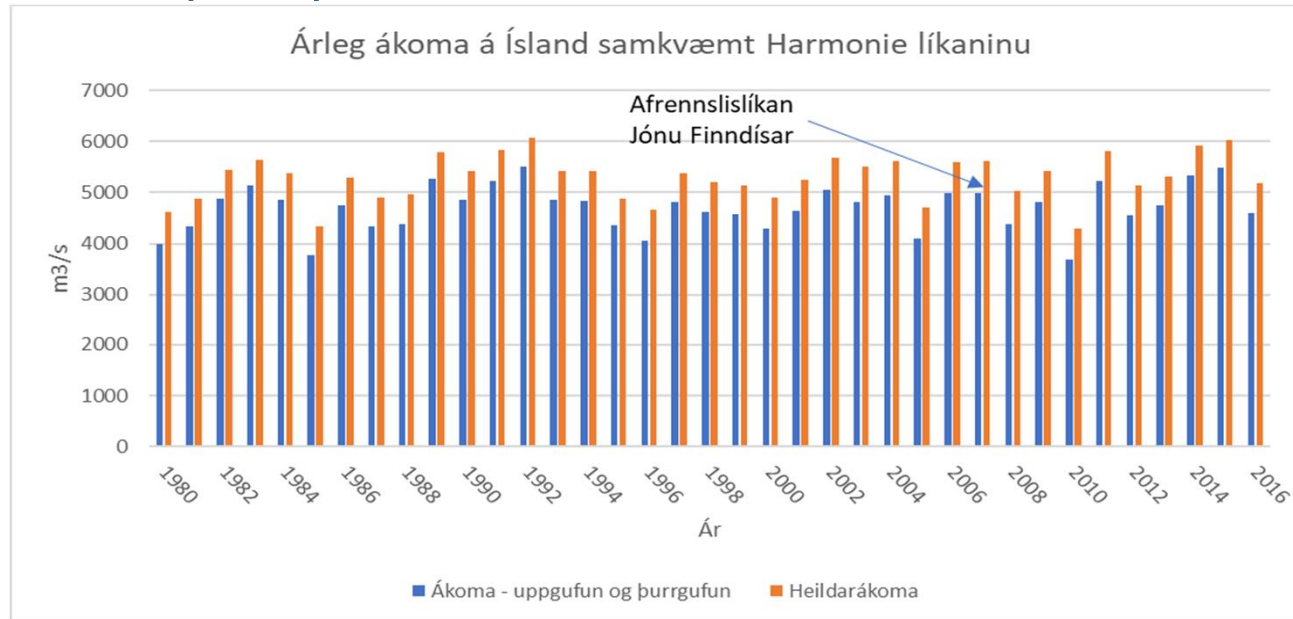


Source: Icelandic Reanalysis Project 1981-2010

Created: 23.02.2017



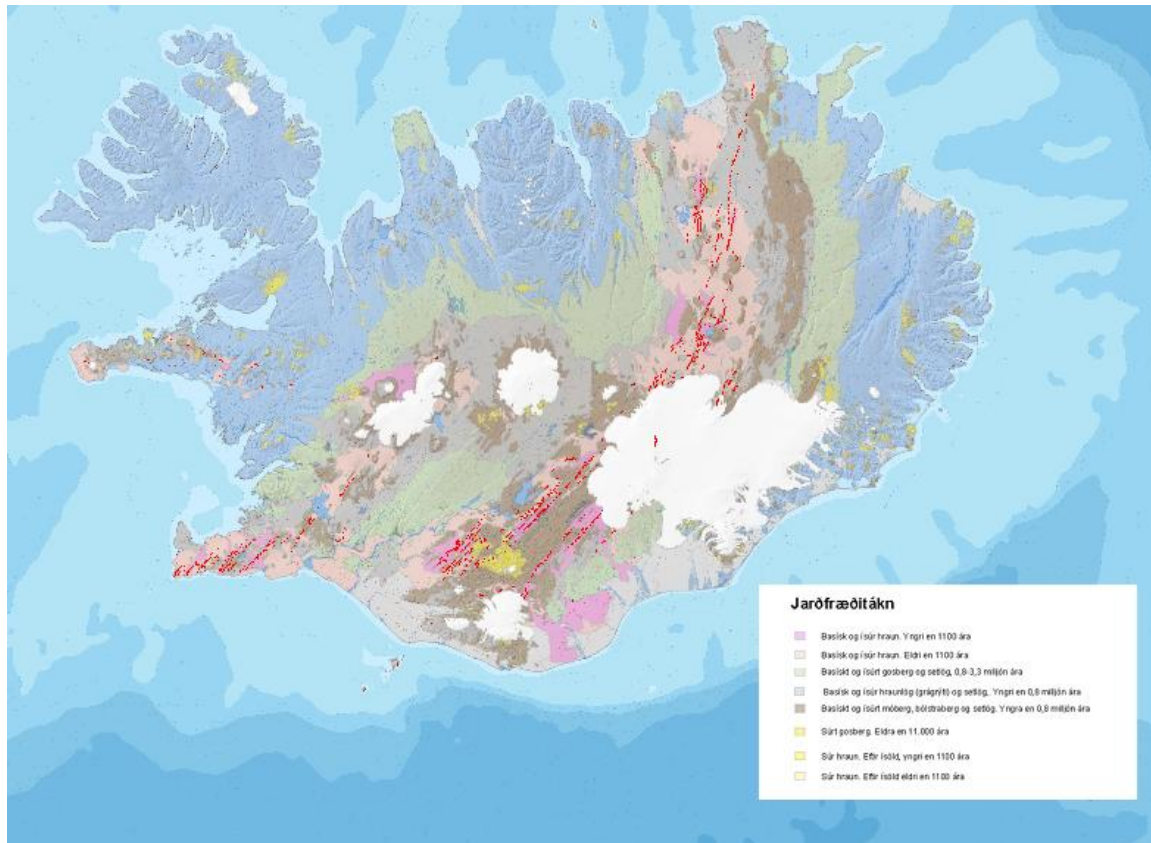
## Annual precipitation and runoff



- ✓ Total annual precipitation based on the Harmonie model: 4000 – 6000 m<sup>3</sup>/s
- ✓ Model from 2007\* estimated a total runoff to be 4770 m<sup>3</sup>/s but according to the harmonie model the total precipitation is 499m<sup>3</sup>/s
- ✓ Where of ground water runoff was estimated to be 1000 m<sup>3</sup>/s

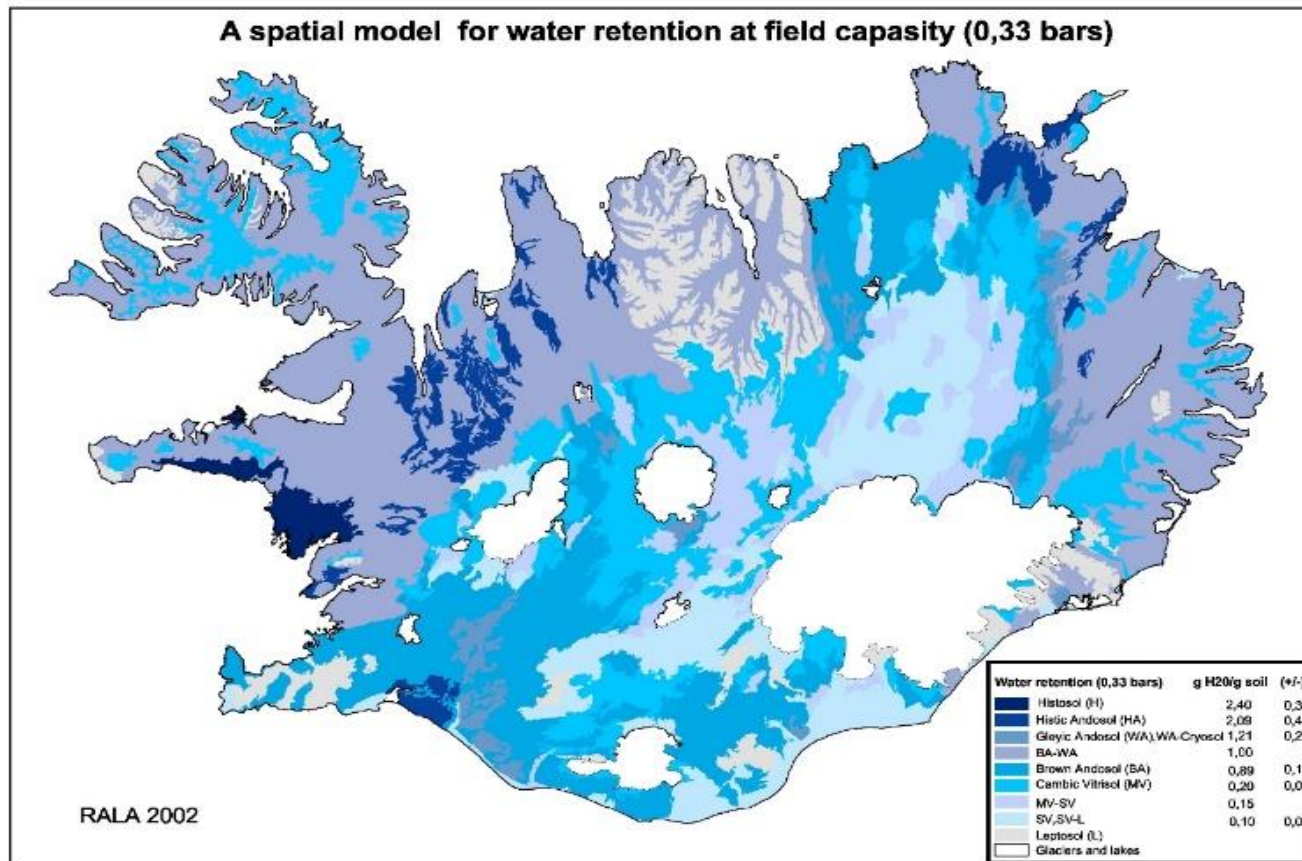


# Infiltration: Bed rock – permeability and porosity



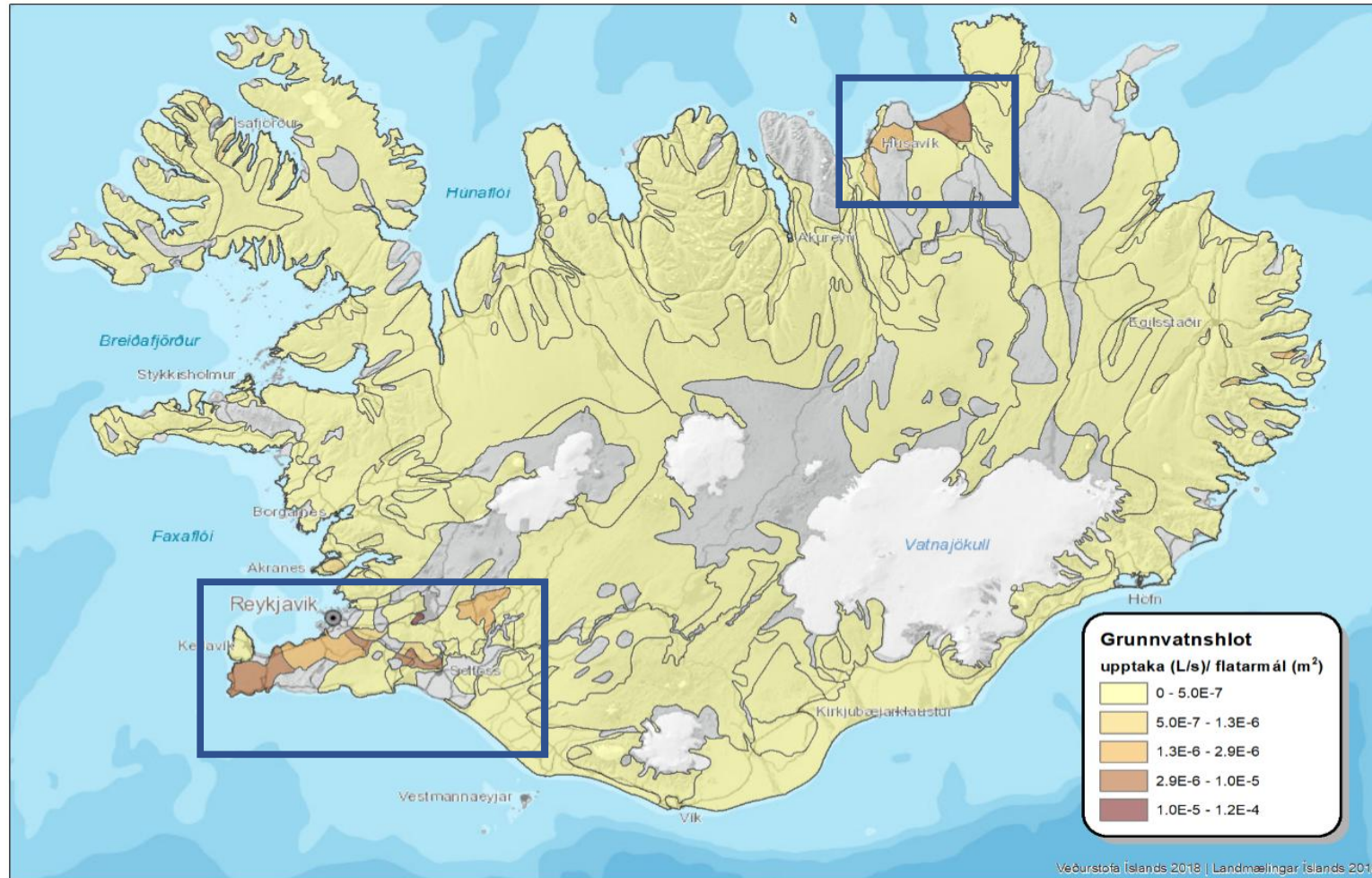


# Infiltration: Water retention time based on soilmaps (Lbhl)

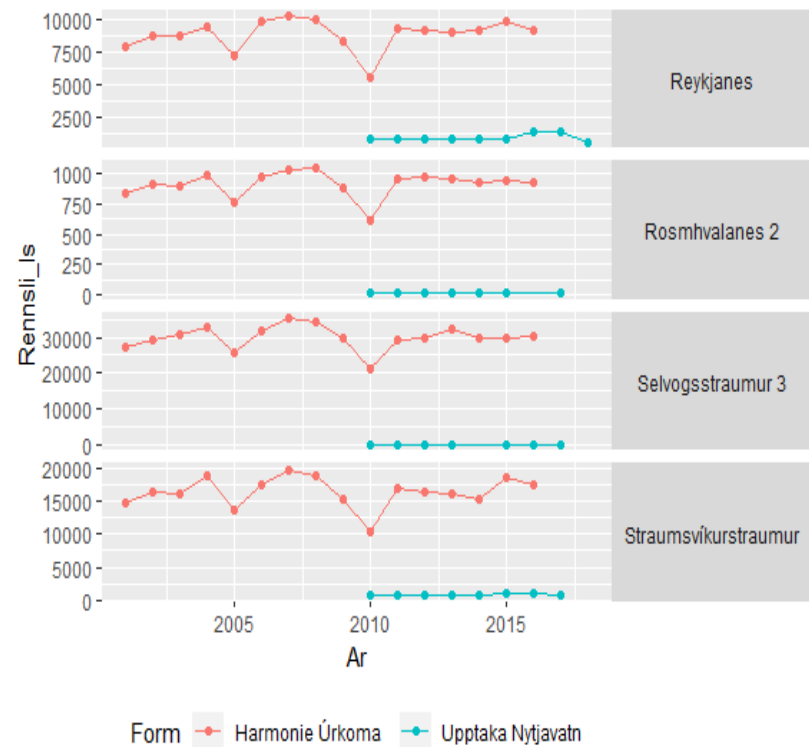
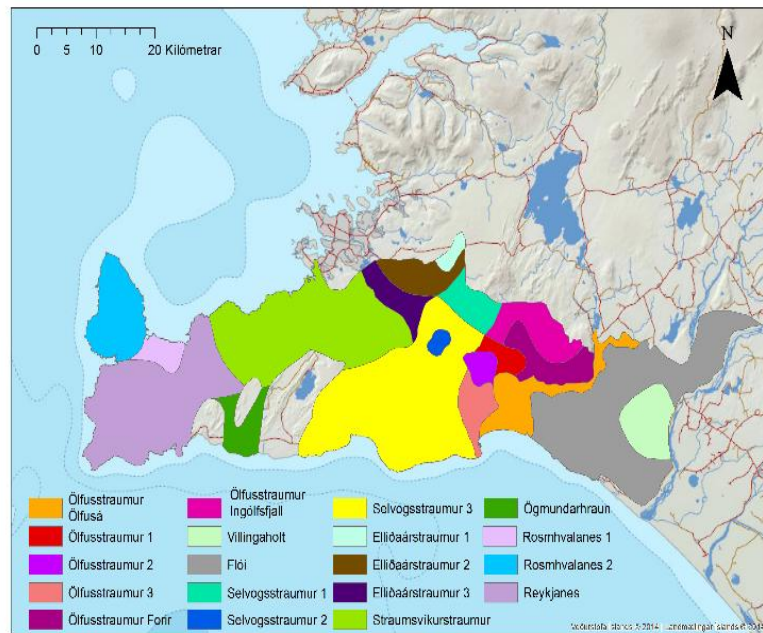


Gudmunsson et.al. 2006

# Groundwater absorption $\text{m}^3/\text{s}/\text{m}^2$



# The Capital and Reykjanes area



Icelandic Met Office

## Groundwater availability

**Average retentiontime calculation will be based on the average geology and soil type of the watershed.**

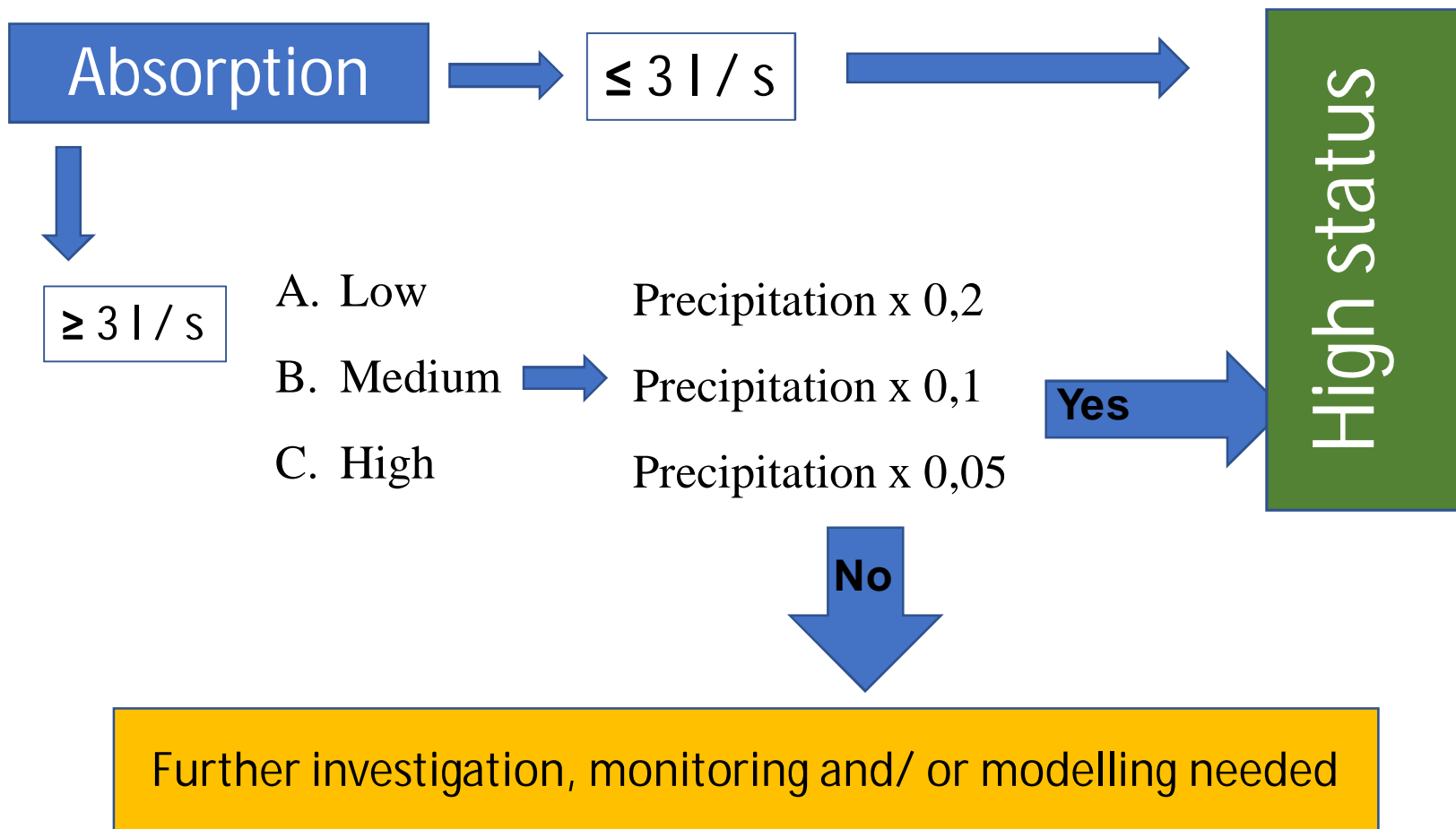
### **Three main water retention classes**

**A. Low :** Young geology - Porous – Cambic Vitrisol

**B. Medium:** Geology med age - Semi porous - Brown Andosol

**C. High:** Old geology, clay, Histosol og Andosol







Icelandic Met  
Office



## Suggested approach - draft

Verklagsregla 1 Grunnvatnshlot telst í góðu ástandi varðandi magnstöðu þegar vatnstaka úr því er innan við 3 l/s , nema beinar mælingar sýni annað.

Verklagsregla 2 Magnstaða grunnvatns í tilteknu hloti telst vera góð þegar Upptaka á svæðum a) er ekki meiri en  $0.2 * \text{Úrkoma á grunnvatnshlotið}$ , eða Upptaka á svæðum b) er ekki meiri en  $0.1 * \text{Úrkoma á grunnvatnshlotið}$ , eða Upptaka á svæðum c) er ekki meiri en  $0.05 * \text{Úrkoma á grunnvatnshlotið}$ , eða

Upptaka á svæðum þar sem staðfest grunnvatnslíkön leiða í ljós að upptakan og lindarennisli er valda ekki álagi á magnstöðu.—ath: til lengri tíma þarf ganga þar úr skugga um með vöktun að líkanið haldi

Verklagsregla 3 Þar sem grunnvatnshlot uppfylla ekki verklagsreglu 1 og 2 þarf að gera frekari rannsóknir

ABG1



Día 11

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ABG1

Allt á íslensku - þetta er líklega það mikilvægasta sem við myndum vilja fá umræðu um.  
Aðalbjörg B. Guttormsdóttir; 21.5.2019