Citizen observers in hydrology - Experiences from the CrowdWater project

Jan Seibert, Barbara Strobl, Simon Etter, Marc Vis and Ilja van Meerveld
On the following slides we compiled information about CrowdWater activities, but you can also skip the slides and jump directly to the action points below:

- Go and get the app 😊 (Search for CrowdWater, Spotteron in your app store)
- Play the CrowdWater game: https://crowdwater.ch/en/crowdwater-game/
- Watch the PhD seminars by Barbara Strobl and Simon Etter on our Youtube channel, https://www.youtube.com/channel/UC088v9paXZyJ9TcRFh7oNYg)
- Sign up for our Open Online Course about CrowdWater (in German, https://edu-exchange.uzh.ch/courses/course-v1:UZH+Crowdwater+2019_T1/about
- Spread the word about our two new PhD positions, applications still welcome (https://crowdwater.ch/wp-content/uploads/2020/04/PhD_announcement_CrowdWater2020_DE.pdf)

http://www.crowdwater.ch
Vision:
Scalable approach based on smartphone app
CrowdWater: Evaluate the potential of crowd-based data for hydrological modelling

What can be observed by the 'crowd' (citizen scientists)?
At which accuracy?

Which data would be most informative?
Value of data for modelling?
As shown at previous EGU meetings, water level (classes) are surprisingly informative, especially for humid catchments. Two plots as a reminder, for details please see the two papers.

Seibert and Vis, 2016, Hydrological Processes

van Meerveld et al., 2017, HESS
The CrowdWater | SPOTTERON App
CrowdWater app: Water levels classes
Example time series
App: Soil moisture

Rinderer et al., 2012, Hydrological Processes
App: Temporary streams

What do you observe?
Estimate the current flow condition of the temporary stream:

- DRY STREAMBED
- DAMP / WET STREAMBED
- ISOLATED POOLS
- STANDING WATER
- TRICKLING WATER
- FLOWING
App: Plastic pollution

Please select the type of observation

- FLOATING PLASTIC
- PLASTIC ON SHORE

Did you see any plastic?
How many plastic pieces did you count during your stated time and over the stated width of the river?

- NO PLASTIC
- 1-2 PIECES
- 3-5 PIECES
- 6-10 PIECES
- 11-20 PIECES
- 21-100 PIECES
- 100+ PIECES
- COVERED ENTIRELY
New: two more categories

NEW
April 2020
New: Physical staff gauge
New: Stream type

Would you swim in this water?
- YES
- NO

Is this water body natural or controlled?
- NATURAL
- CONTROLLED

Can you see fish or other living beings in the water?
- YES
- NO

Do you see signs of water pollution?
- Pollution

Does this stream sometimes dry up?
- Yes, it sometimes dries up

SAVE
https://www.crowdwater.ch/en/data/
Some of our publications ....
Virtual staff gauge for crowd-based observations

Crowd-based water level classes are informative

Data quality control based on an online game


https://crowdwater.ch/en/crowdwater-game/
CrowdWater publications

See https://crowdwater.ch/en/publications/
Conclusions

• Simple approaches can provide useful data
• Value of data can be evaluated
• Crowd-based water-level class observations can be informative
• A game can help for data quality control

http://www.crowdwater.ch
If you liked what you saw here, please consider following up with the action point below:

• Go and get the app 😊 (Search for CrowdWater, Spotteron in your app store)
• Play the CrowdWater game: [https://crowdwater.ch/en/crowdwater-game/](https://crowdwater.ch/en/crowdwater-game/)
• Watch the PhD seminars by Barbara Strobl and Simon Etter on our Youtube channel, [https://www.youtube.com/channel/UC088v9paXZyJ9TcRFh7oNYg](https://www.youtube.com/channel/UC088v9paXZyJ9TcRFh7oNYg)
• Sign up for our Open Online Course about CrowdWater (in German, [https://edu-exchange.uzh.ch/courses/course-v1:UZH+Crowdwater+2019_T1/about](https://edu-exchange.uzh.ch/courses/course-v1:UZH+Crowdwater+2019_T1/about))
• Spread the word about our two new PhD positions, applications still welcome ([https://crowdwater.ch/wp-content/uploads/2020/04/PhD_announcement_CrowdWater2020_DE.pdf](https://crowdwater.ch/wp-content/uploads/2020/04/PhD_announcement_CrowdWater2020_DE.pdf))

http://www.crowdwater.ch