

# Samenwerkingsproces burgerinitiatieven

Zwerfafval in Nederlandse stroomgebieden monitoren mbv  
citizen science

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## Citizen Science

In order to examine the extent of the problem, extensive data collection with large geographical coverage is needed. To achieve this, the public is increasingly being involved in different phases of the scientific process, often during data collection or data analysis (Bosker et al., 2017; Hidalgo-Ruz et al., 2018; Nelms et al., 2017; Rech et al., 2015; Syakti et al., 2017). This type of public participation in the research process is often called citizen science (Bonney et al., 2009). Engaging with citizen scientists

*Rambonnet et al., 2019. Making citizen science count: Best practices and challenges of citizen science projects on plastics in aquatic environments. <https://doi.org/10.1016/j.marpolbul.2019.05.056>*

## Citizen Science data kwaliteit

We demonstrated that with appropriate protocols, methodology and training, citizen scientist volunteers significantly contribute to marine debris data collection and such efforts can enhance a national research program. Similarly, trained volunteers can readily contribute to

*Tonya van der Velde, David A. Milton, T.J. Lawson, Chris Wilcox, Matt Lansdell, Geraldine Davis, Genevieve Perkins, Britta Denise Hardesty. Comparison of marine debris data collected by researchers and citizen scientists: Is citizen science data worth the effort?, Biological Conservation, Volume 208, 2017, Pages 127-138, ISSN 0006-3207, <https://doi.org/10.1016/j.biocon.2016.05.025>.*

tive surveys at specific sites are needed. The citizen science approach is suitable for such surveys, as it was shown that volunteering schoolchildren are able to quantify litter amounts and detect accumulations of illegally dumped litter even at riversides with a complex geomorphologic and vegetational structure. Based on

*Rech, S., Macaya-Caquilpán, V., Pantoja, J.F. et al. Sampling of riverine litter with citizen scientists — findings and recommendations. Environ Monit Assess **187**, 335 (2015). <https://doi.org/10.1007/s10661-015-4473-y>*

## Overzicht en classificatie

### Actoren/Initiatieven

#### CITIZEN SCIENCE

- ① Schone Rivieren
- ② Scouts4Science
- ③ By The Ocean We Unite
- ④ Clear Rivers (CS)
- ⑤ Antwerpen Universiteit (CS)
- ⑥a Hogeschool Rotterdam
- ⑥b Hogeschool Zeeland
- ⑦ Plastic Spotter
- ⑧ Wageningen University & Research

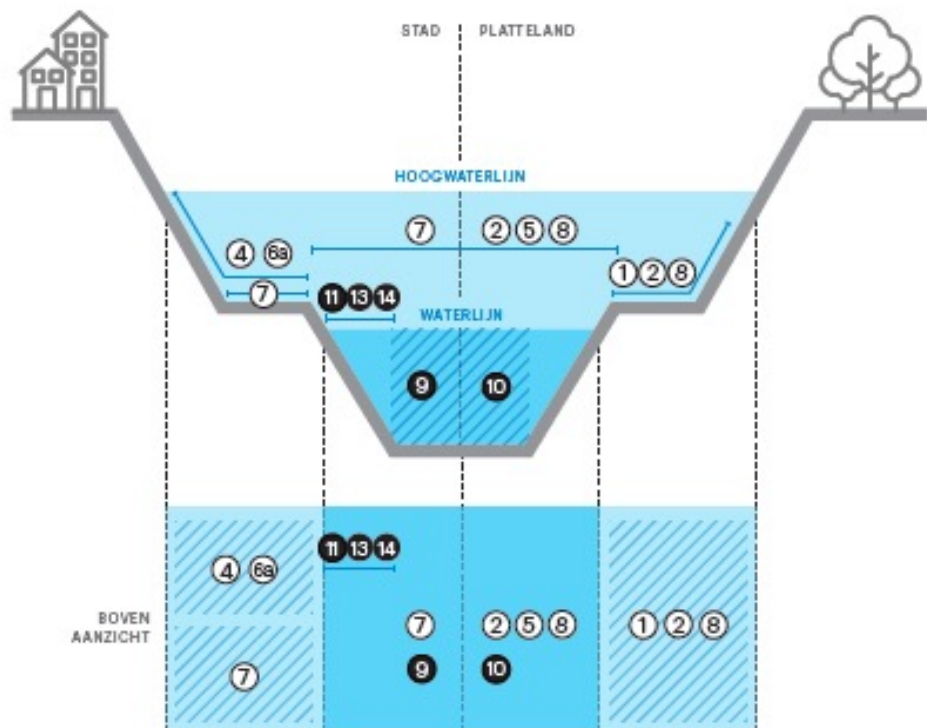
#### NON-CITIZEN SCIENCE

- ⑨ The Great Bubble Barrier
- ⑩ Antwerpen Universiteit (Experimental Tracing)
- ⑪ Clear Rivers Trap
- ⑫ Noria Trap
- ⑬ Taww Shoreliner
- ⑭ All Seas Catchy





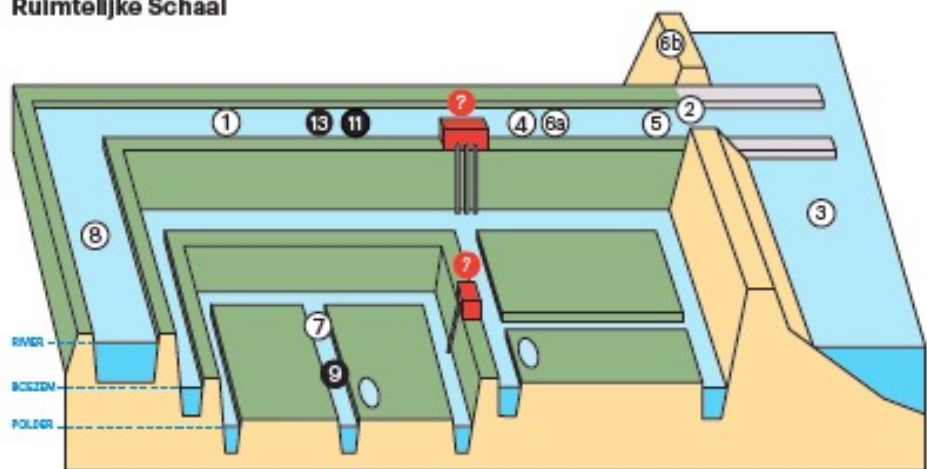
## Locatie in dwarsdoorsnede en bovenaanzicht



## Methodiek en resulterende eenheid

n/soort	OSPAR lijst	① ⑥ ⑨
	Plastic Polymeer type	④ ⑧ ⑬
n/soort	Bedekkingsgraad op oever	⑦ ① ⑥a ⑥b
n/m <sup>2</sup> of %	Bedekkingsgraad op water	⑦
n/m <sup>2</sup> /s of %	Monstername microplastics	③
n/km <sup>2</sup>	Tagging	①
n	Tracing	⑤
kg	Gewicht	⑪ ⑫ ⑭
m <sup>3</sup>	Volume	⑩
massa/n	Massa per item	⑧

## Ruimtelijke Schaal



## Tijdelijke Schaal

Continu ⑨ ⑪ ⑫ ⑬ ⑭

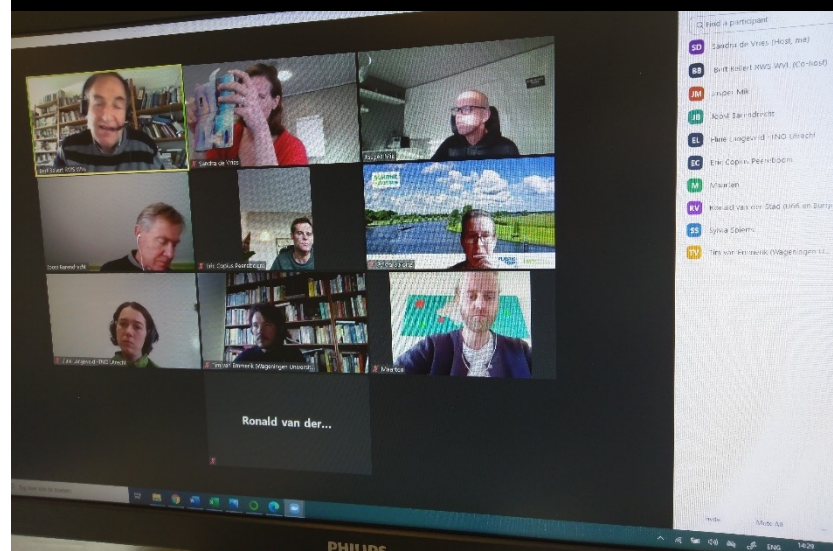
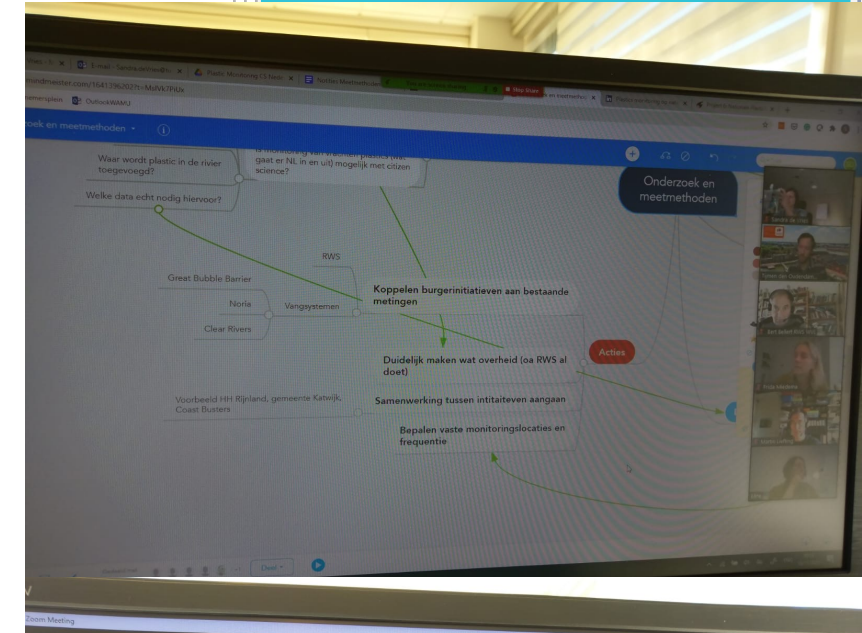
Periodiek ① ④

Willekeurig ② ③ ⑤ ⑥a ⑥b ⑦ ⑧ ⑩





## Bijeenkomsten



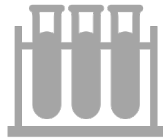


# Resultaten

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Huidige meettechnieken waar nodig valideren/optimaliseren/corrigeren



Nieuwe meettechnieken testen en ontwikkelen voor on-gemonitorde compartimenten



Het beter ruimtelijk en temporeel verdelen en inzetten



Data van de verschillende initiatieven samenbrengen en inzichtelijk maken



Onderling leren betreffende het betrekken en trainen van vrijwilligers

## Concluderend

### ➤ Opzet monitoring zwerfafval rivieren:

- Meettechnieken en monitoring protocollen wanneer mogelijk baseren op ervaringen burgerinitiatieven
- Reguliere monitoring RWS als basis voor lange termijn monitoring
- Integratie en versterking door burgerinitiatieven

### ➤ Burgerinitiatieven versterken

- Steunen van burgerinitiatieven om continuïteit en verbeteringen te kunnen waarborgen
- Faciliteren van vervolg samenwerking burgerinitiatieven
- Data platform voor samenbrengen EN 'op de kaart zetten' plastic monitoring Nederland



## Contact

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PULSAQUA



Rijkswaterstaat  
*Ministerie van Infrastructuur en Milieu*

