

Supplemental file 1 Categorization of CS activities.

Classification	Categories	Authors
Level of volunteers' participation	Contribution, crowd sourcing	Shirk et al.
	Distributed intelligence	2012
	Participatory science	Haklay 2013
	Collaboration	
	Co-creation	
	Extreme CS	
Types of volunteers' contribution in CS activities	Crowd sourcing	Franzoni et al.
	Required knowledge to carry out CS activities	2022
	Resources contributed	
	Decisions made in the process	
CS activities' primary goals	Action	Wiggins and
	<i>Initiated by volunteers to support solutions to mostly local issues scientifically</i>	Crowston
		2011
	Conservation	
	<i>Activities related to conservation of natural resources to support awareness and outreach</i>	
	Investigation	
	<i>Collecting data for research purposes</i>	
Virtual		
	<i>Investigation activities with online participation of volunteers</i>	

Classification	Categories	Authors
	Education <i>Education and outreach, outcomes provide learning outcomes</i>	
Scientific areas of CS output	Biology, conservation and ecology Geographic information research Social sciences/epidemiology in relation to environmental issues and health	Kullenberg and Kasperowski 2016
Value for science, policy and society	CS as research method; aim: scientific output CS as means of public engagement to raise awareness of scientific matters of concern to society CS targets specific issues of concern through civic mobilization, aiming for political or legal influence	Kasperowski et al. 2018
Descriptive factors to define whether activities can be categorized as CS or not	Activeness <i>Level of volunteers' cognitive engagement</i> Compensation <i>Financial incentives for CS participation</i> Purpose of CS activity Purpose of knowledge production of CS activity Professionalism <i>Required skills from the volunteers</i> Training	Haklay et al. 2021

Classification	Categories	Authors
	<i>Level of training provided to the volunteers</i>	
	Data sharing	
	Leadership	
	Scientific field	
	Involvement	
	<i>Level of participation</i>	