

The Characteristics, Activities and Goals of Environmental Organizations Engaged in Advocacy within the Australian Environmental Movement

Robyn Gulliver, Kelly S Fielding, and Winnifred Louis

This is an Accepted Manuscript of an article published by Taylor & Francis in Environmental Communication on 18th December 2019, available online:

<https://www.tandfonline.com/doi/full/10.1080/17524032.2019.1697326>.

Declarations of interest: none.

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

The data that support the findings of this study are openly available in the Open Science Framework at <http://doi.org/10.17605/OSF.IO/NZX42>, or via anonymous link at https://osf.io/nzx42/?view_only=d2d6fd537af84678bf3d35513c1429df

Abstract

A sustained groundswell of grassroots advocacy is required to trigger the urgent action required to solve our many global environmental problems. To gain a comprehensive understanding of the characteristics, issue focus, tactics and targets of this grassroots advocacy, we analyzed the website communications of 497 environmental movement organizations (EMOs) undertaking advocacy in Australia. Findings indicate that Conservation and Protection issues continue to dominate, although a wave of new climate change related issue groups have emerged in recent years. Almost half of all groups operate at a local level. EMO websites suggest that their actions are primarily normative (vs. radical) and focus primarily on information provision. Of the 960 campaign targets identified, just over half were political, however, climate change, renewable energy and sustainability campaigns more often targeted individuals or business entities. We identify the areas where further investigation could advance the research agenda on grassroots environmental advocacy.

Keywords: Environmental movement; environmental communication; environmental organizations; advocacy; campaigns

Introduction

In their recent warning to humanity, over 15,000 scientists endorsed the position that humans have failed to address environmental crises sufficiently (Ripple et al., 2017). To deal with these crises, scientists highlight the need for increased grassroots environmental advocacy. Historically, the mobilization of environmental advocates helped usher in an era of unprecedented environmental legislation and cultural change (Agnone, 2007). In recent

times, environmental campaigns have commanded international attention, and the advent of new communication technologies has enabled the transformation of collective action (Agarwal, Lim, & Wigand, 2011). Yet, despite the critical role that environmental groups play within the broader environmental movement, there are important gaps in our knowledge about the full range and nature of the advocacy focused groups, and the strategies and targets of their advocacy. This study uses data on organizations engaged in advocacy activities in the Australian environmental movement in 2017 to advance this research agenda and gauge the potential that environmental advocacy has to drive the urgent response needed to our environmental challenges¹.

Past research has usually focused on a small number of large, active, well-established and well-resourced environmental movement organizations (EMOs) such as Greenpeace and Friends of the Earth (Bond, 2012; E Johnson, Saito, & Nishikido, 2009). In contrast, our data, obtained via a content analysis of 497 EMOs' website text, enables a far more comprehensive empirical database. This dataset captures the outward facing characteristics of the environmental advocacy organizations, communicated by EMOs on their own terms, free from media or government influence. It includes a substantial range of both traditional and non-traditional EMOs as well as the full diversity of advocacy issues, activities and

¹ We use the term 'environmental movement' in line with previous research using an organization-centred approach to movement analysis, however, recent research on the spatial and social ecologies of social movements have also highlighted the role of non-organizational elements in social movements (cf Zhang & Zhao, 2018).

campaigns communicated via their webpages. We use this information to build on previous research on the key characteristics of EMOs active within environmental movements including the strategic and tactical choices made by organizations in order to achieve their goals (e.g. Brulle & Rootes, 2015; Giugni & Grasso, 2015; Porta & Rucht, 2002).

In this paper we use Cox & Pezzullo's definition of advocacy as "the act of persuading or arguing in a support of a specific cause, policy, idea, or set of values" (Cox & Pezzullo, 2016, p. 177). This advocacy can be undertaken by individuals or groups (Tarrow, 2011). These individuals and EMOs together form a movement on the basis of a shared identity (Diani, 1992). As an advanced democracy on the forefront of climate impacts, advocacy is able to occur freely and openly making Australia an ideal context in which to undertake this research. A diversity of EMOs are active, including an increasing number of grassroots organizations focused on climate advocacy (McDonald, 2016). Very high levels of access to digital communications (ABS, 2016) also enable widespread access to EMOs and their online and offline communications. These factors enable us to gain a clearer picture of the characteristics of EMOs and the activities and campaigns they are undertaking.

Literature Review

Environmental advocacy and advocacy in general has increasingly taken place online, partly because of the mobilization and communication opportunities this technology offers (Katz-Kimchi & Manosevitch, 2015; Schäfer, 2012; Yasseri, Hale, & Margetts, 2013). Most research focuses on advocacy groups' use of social media (cf. Guo & Saxton, 2014; Obar, Zube, & Lampe, 2012) or investigates the potential range of online actions made possible through online communication (Van Laer & Van Aelst, 2010). Despite this, we do not have comprehensive data to inform how EMOs actually use these opportunities presented through online communication (Chan, 2017; Stein, 2009). Prior to the digital era information on

environmental advocacy was constructed through protest event catalogues, surveys or publically accessible lists such as those taken from tax records. However, these methodologies can lead to selection bias, through the incorporation of organizations which have ceased function, or the omission of information or less well-resourced organizations from the data set (E Johnson et al., 2009). Thus, we use the opportunity presented by internet communication to create a diverse and multi-source data set, through reviewing multiple databases of EMOs and including additional organizations listed on their websites, thereby avoiding selection bias in the data set (cf. Andrews, Edwards, Al-Turk, & Hunter, 2016; Brulle, Turner, Carmichael, & Jenkins, 2007; Grønbjerg & Clerkin, 2005). The following sections consider past findings on two primary elements of advocacy research in turn; organizations' strategies and tactics, and the issues and campaigns they work on.

Strategies and tactics

Advocacy strategies can be conceptualized as high level organizing plans for achieving an organization's goals (Turner & Killian, 1987). Tactics are the means by which these strategies are implemented. These have been described as forms of action (Rucht, 1990), or 'action repertoires', that is, the range of tactics used by social movement organizations (Carmin & Balser, 2002; Tilly, 1978). Although variations exist, the most commonly found categorization of strategies across social movement literature distinguishes the insider, 'within-system' conventional or normative approaches to advocacy, from outsider, 'out of system', or radical protest approaches to advocacy (Andrews & Caren, 2010; Brulle et al., 2007; Richards & Heard, 2005).

Insider strategies use tactics which are less confrontational, representing "pragmatic attempts at reform within the political system" (Dalton, Recchia, & Rohrschneider, 2003, p. 5). Often they are designed to facilitate access to political power in order to influence

political or policy outcomes from the top down (Richards & Heard, 2005). Insider tactics include lobbying politicians, signing petitions, or taking legal action. Some researchers have argued that an insider strategic approach is more prevalent in larger, professional organizations (e.g., Chapman, Parvazian, & Skinner, 2017; O'Brien, 2013; Tranter, 2009). Dependency on particular sources of funding and the need to maintain large, professional organizational structures can result in a tendency for these types of organizations to use insider tactics such as lobbying (Brulle & Rootes, 2015; Hadden & Jasny, 2017; Rootes, 1999).

Conversely, outsider strategies are generally 'non-normative', implemented by tactics which violate social norms. These activities operate, "outside the confines of the existing social rules and structure" (Wright, Taylor, & Moghaddam, 1990, p. 995). Outsider strategies lead to violent and non-violent direct action tactics, where contentious interactions are instituted to bring "political, economic, social, emotional, or moral pressure to bear in the wielding of power" (Schock, 2003, p. 705). Some research suggests that non-normative strategies may be more effective at reducing the power of advantaged groups and changing the status quo (Louis, 2009). This may be because outsider tactics gain more public, political and media attention and are, by design, far more visible to the public than insider tactics, which often happen behind closed doors (Lester & Hutchins, 2012).

Research investigating the insider/outsider distinction often examines an organization's action repertoire as a way of assessing whether organizations are privileging insider or outsider strategies. A limitation of this approach is that existing categorizations of action repertoires are based on a subset of environmental issues, organizations or campaigns (Dalton et al., 2003; Erica Johnson & Prakash, 2007) which may obscure the diversity of activities undertaken by EMOs within a national environmental movement. To our

knowledge there is no research that incorporates the diversity of EMOs active across an entire nation. Thus, we use content analysis of Australian EMOs' websites to construct a comprehensive database that identifies the focus of the organizations as well as their activities. Specifically, the research addresses the question:

RQ1a: What are the dominant issues and characteristics of EMOs engaged in advocacy in the modern Australian environmental movement?

It is not clear whether the binary insider/outsider distinction so prominent in the literature accurately maps onto the diverse range of actions made available through new information and communication technologies, which rely less on formal organizational structures (Bimber, Flanagin, & Stohl, 2005). Furthermore, changes in advocacy strategies may influence a movement's action repertoire; for example, increased use of strategies which target individuals and/or businesses to reduce ecologically damaging practices (e.g. Barr & Pollard, 2017; Thörn & Svenberg, 2016). This research addresses this knowledge gap through following question:

RQ1b: What are the online and offline collective actions organized by EMOs, and do these map onto the insider/outside action repertoire categorization?

Campaigns and Targets

Historically, the primary aim of social movement advocacy has been to get issues on the political agenda (Tilly, 1978), operationalised through campaigns mobilising actors to achieve a shared aim (Porta & Rucht, 2002). As such, advocacy frequently targets those who hold political power, such as politicians, or governments (Hisschemöller & Sioziou, 2013). However, recently an emerging trend focuses on different campaign targets, for example, corporations such as Nike and Home Depot (Bloomfield, 2014), woodchip processors (Lewis, O'Donovan, & Willett, 2017), and a wide variety of fossil fuel extractors and consumers

(Bratman, Brunette, Shelly, & Nicholson, 2016). This may reflect a growing awareness that business actors are influential in shaping environmental outcomes (Downie, 2017). Whether through influencing purchasing decisions or advocacy work, using the market to effect change has been successful (Stolle, Hooghe, & Micheletti, 2005). Similarly, behavior change campaigns targeting non-political entities such as individuals or social groups may encourage people to reduce personal carbon emissions through lifestyle choices (e.g. Büchs, 2014) or engage in local climate adaptation activities through groups such as Transition Towns (Barr & Pollard, 2017).

These changing trends may indicate that environmental advocacy is moving from a focus on political power holders towards influencing business and individuals. However, there is also some evidence that SMOs resist this strategy of ‘responsibilisation’ (e.g. see Laestadius, Neff, Barry, & Frattaroli, 2014; Thörn & Svenberg, 2016), and veer away from campaigns targeting individual responsibility for ecological improvement. However, to the authors’ knowledge, there is no comprehensive existing database that identifies campaigns and targets across a diverse and substantial population of EMOs engaged in advocacy within a national environmental movement. Therefore, the current research addresses the following question:

RQ2: Who are the targets of EMO campaigns, and how do these vary across issue focus?

Method

Study Population

To identify the population of EMOs engaged in advocacy for content analysis of their organizational websites, we identified a pool of 2,668 potential groups using multiple sources

(e.g. see Andrews et al., 2016; Brulle et al., 2007; Grønbjerg & Clerkin, 2005). We used a snowball identification system via search engine crawls, hyperlinked networks, and online database searches, beginning with the Australian Register of Environmental Organisations (Australian Government, 2018). Organizations were then manually checked for the presence of an active website with a focus on national environmental issues. Applying these inclusion criteria resulted in 1,373 websites selected for more detailed review (see supplementary material, Table S1).

The population was further filtered to only include those groups who undertook some form of advocacy. We used the Australian Charities and Not-for-profits Commission (ACNC) definition of ‘advocacy’ and ‘campaigning’ as “activities which are aimed at securing or opposing any change to a law, policy or practice in the Commonwealth, a state or territory, or another country” (Australian Government, 2012, p. 1). ‘Campaign’, ‘advocate’ (including variants) and ‘lobby’ were chosen as the search terms for identifying organizations engaged in environmental advocacy.

A manual search of each individual site using the three key words was undertaken via the online site-provided search tool. Groups that did not return any positive search results, or did not provide an internal site search option, were then manually searched on the ‘About’, or ‘What we do’ or equivalent webpage for a selected range of other terms related to advocacy. These included terms such as ‘influence’, ‘fight’, ‘movement’, or ‘take action’, as well as phrases which expressed any activities related to changing laws, policies or practices. As a result of this process a further 876 groups were removed as they were judged not to undertake any form of environmental advocacy (following Andrews et al., 2016). The largest sub-group removed from the population were those working in ‘environmental remediation’, for example, through wildlife rescue or the restoration of bushland.

The final sample for analysis was 497 websites that were downloaded between 5th December 2016 and 30th April 2017 into static form for coding via Adobe Acrobat multilevel website-to-pdf conversion tool. Downloaded content included all webpages for each organization, online actions including petitions, declarations and online emails, and news and blog posts back dated from 01/01/2016 to the date of individual download. Downloadable reports that had been authored by the target organization were included alongside annual, financial and presidents' (or equivalent) reports. Audiovisual material was not downloaded, nor were social media sites or other external platform content. Each of the 497 Adobe files were then cleaned. External website pages were manually removed, as were any petitions, reports or submissions authored by external parties. Repetitious footers and page duplications were removed to avoid unduly influencing text and linguistic analysis output values. The process created 62,516 pages of website content for analysis, with websites ranging from 5 – 1500 pages in length.

Content Analysis and Coding

Codeable attributes for content analysis were identified from the research literature on environmental advocacy and communication about issue focus, strategy, tactics, campaigns and campaign targets. In addition, we assessed other important characteristics of the groups including their geographic area of operations and founding date (see Supplementary Table 2 for the complete list of coded characteristics) resulting in 66 individual attributes for coding. Key words were then created for each attribute, enabling efficient text searching via the word versions of each static website in addition to direct review of the website text itself. Inter-coder reliability was established through a staged approach, testing two coders' results after 10, 30 and 50 documents were coded. Discrepancies of <0.60 in inter-coder reliability were reconciled at each stage through discussion, with 100% agreement reached between the two

coders. A total of 50 websites were dual coded, resulting in a 10% sample percentage which is suitable for online content coding (Joyce, 2018; Lombard, Snyder-Duch, & Bracken, 2002). The remaining 90% of the data was then coded by one person. The final average inter-coder reliability was 0.809 (Krippendorff's Alpha) and 0.81 (Cohen's Kappa), which are considered acceptable (Hayes & Krippendorff, 2007). Data including the codebook and disaggregated reliability statistics is available on the Open Science Framework at https://osf.io/nzx42/?view_only=d2d6fd537af84678bf3d35513c1429df.

Results

Environmental Movement Organizations' Features

Analyses in this section address RQ1, identifying the focus and characteristics of EMOs engaged in advocacy in the Australian environmental movement.

Table 1: Environmental Organization Features

Issue Focus	N (%)	Geographical Spread				Founding Date	
		Local	National	Regional	State	Average	Earliest
Conservation & Protection	254 (51.1%)	106	60	45	43	1986	1883
Climate	83 (16.7%)	55	26	-	2	2009	1997
Sustainability	63 (12.7%)	38	9	9	7	2001	1971
Mining	37 (7.4%)	21	3	7	6	2010	2001
Renewable Energy	33 (6.6%)	16	7	5	5	2011	2005
Waste	13 (2.6%)	1	10	-	2	1998	1971
Pollution	8 (1.6%)	4	2	-	2	2000	1993
Nuclear	6 (1.2%)	-	2	1	3	2005	1997
Grand Total	497	241	119	67	70	1995	1883

Issue Focus

Issue focus was coded by identifying the key environmental issue each organization claimed to work on. Across the 497 groups eight primary issues were identified, with Conservation and Protection given as a single issue focus due to the frequent combined usage of both terms across websites. As Table 1 shows, the most common goal of the environmental advocacy groups was conservation and protection with over half (254/497 – 51%) of the groups stating that they focused on this goal. These groups advocated for the conservation and/or protection of natural resources ranging from forests to flora and fauna and water. Many of these groups focus on more than one conservation and protection issue, including issues that cross over into other categories such as nuclear waste dumps, mining expansion and forestry logging (n=111, 44%).

Groups focused specifically on climate change comprise the second largest group (83/497 – 17%). However, some renewable energy (33/497 – 7%) and sustainability groups (63/497 – 13%) also incorporate climate change concerns into their work.. Anti-mining groups (n = 37) constituted 7% of the groups sampled, with most targeting coal mining (13/37 – 35%) and unconventional gas mining (11/37, 30%).

Groups focusing on nuclear, pollution, and waste were rare. While there were 13 groups focused on waste, three exclusively focused on plastic bag bans. In contrast, the eight pollution groups varied widely: two of the groups focused on specific pollution events, and the remainder advocated against mining-related pollution, air pollution and pesticides. No groups focused on environmental justice.

Geographical Sphere of Operations

The geographical sphere of operations for each group was identified either through the name of the group or from their own descriptions. Almost half (47%) were 'local' groups, operating either within a town or city, or within a particular area such as a valley or island. The highest proportion of local groups was found in the climate category (55/83, 66%), followed by sustainability (38/63, 60.3%) and mining (21/37, 57%).

Conservation and protection groups included the highest proportion (43/254 – 17%) of the 70 groups (14%) operating across entire States or Territories. This is in contrast to the much lower prevalence at the state level of sustainability groups (7/63 - 10%) and climate groups (2/83 - 2%). In addition, 67 of the 497 groups claim regional operations, where their advocacy activities occur across specific geographic regions such as a river basin, or desert area within a state (13%).

A quarter of advocacy groups in the study population claimed a national focus (119/497, 24%). Just over half of these work on conservation and protection issues, and they comprised many of the most well-known EMOs in Australia, such as Sea Shepherd and The Wilderness Society.

Age

Two thirds of groups state their founding date on their websites (317/407- 62%). The Field Naturalists' Society of South Australia) was the oldest group founded in 1883, followed by Birds South Australia in 1899. All 33 groups that formed before 1971 focus on conservation and protection. Up until the year 2000, 118 of the 142 groups established prior to the turn of the 21st century were conservation and protection focused.

There has been a proliferation of groups established in the early 2000s, with 171 groups (34.4%) formed since 2000. The most recent average founding year for a category of environmental group is renewable energy (2011), followed closely by mining (2010) and climate (2009).

Offline and Online Activities

This section addresses RQ1b which asks about the online and offline actions of the groups.

Offline Activities

In total 799 offline events were identified in the study population. Offline activities are events which occur at a physical location and time and date specified on the organizations' website. These were coded by event name and inductively grouped into five event types as shown on Table 2: Actions, Meetings, Information Sharing, Eco-activities and Social/Fundraising. The 'Action' category includes all events that involve some form of physical protest, rally, demonstration or similar.

Table 2: Offline Environmental Activities Categorized by Type of Event

Issue Focus		Regular	Events	Type of Events				
		Meetings		N (%)	Action	Meeting	Information	Eco-activity
	N (%)	N (%)						
Conservation & Protection	254	72 (28%)	423 (53%)	21 (5%)	61 (14%)	137 (32%)	170 (40%)	34 (8%)
Climate	83	28 (34%)	137 (17%)	17 (12%)	14 (10%)	76 (55%)	13 (9%)	17 (12%)
Sustainability	63	24 (38%)	140 (18%)	7 (5%)	23 (16%)	58 (41%)	35 (25%)	17 (12%)
Mining	37	7 (19%)	27 (3%)	7 (26%)	-	14 (52%)	-	6 (22%)
Renewable Energy	33	9 (27%)	32 (4%)	1 (3%)	8 (25%)	16 (50%)	3 (9%)	4 (13%)
Waste	13	-	27 (3%)	-	1 (4%)	6 (22%)	19 (70%)	1 (4%)
Pollution	8	1 (13%)	-	-	-	-	-	-
Nuclear	6	-	13 (2%)	4 (31%)	2 (15%)	7 (54%)	-	-
Grand Total	497	141 (28%)	799	57 (7%)	109 (14%)	314 (39%)	240 (30%)	79 (10%)

Information sharing events were the most common type of event listed and constituted 50% or more of all events in climate, mining, renewable energy and nuclear groups. These include such activities as ‘You, Me and Biodiversity Workshop’ (Wombat Forestcare Inc.), and ‘Public Meeting on Rocky Hill Coal Project’ (Groundswell Gloucester). Eco-activities were the next most common type of event (28%), and included Clean up events, bushcare working bees, and field surveys. Waste and conservation & protection groups had the highest prevalence of eco-activities (70% and 40% respectively).

Almost one fifth of all events were related to organizational management, such as Annual General Meetings and planning meetings. Regular meetings were held by 137 groups (28%), were usually run monthly, and were much more common in the climate (34%), sustainability (38%), and conservation and protection (28%) issue groups. Just eleven of the 191 (4%) national groups indicate they have a regular meeting of some sort, whereas 94 of the 236 (40%) local groups state they have a regular meeting.

Only 55 (7%) of offline events referred to ‘action’, all of which were promoted as legal and non-violent. Examples include the ‘Parliament March’ (Earthworker Cooperative) or ‘Highway Action Protest’ (Limestone Coast Protection Alliance). Confrontational direct action protests do not feature in this sample.

Online activities

In total 478 online actions were found across 183 groups (27%). Online activities are actions which can be undertaken by a supporter entirely online. These included petitions, pledges and online submissions as well as other online activities such as volunteer sign up forms and donation appeals.

Table 3: Online Activities Promoted on Environmental Websites

Issue Focus	Online Actions				E-newsletter	Volunteer	Donation	Online
	N	Groups	Total	Ave/Group	Subscription	Requests	Requests	Shop
	N	Groups	Total	Ave/Group	N (%)	N (%)	N (%)	N
Conservation & Protection	254	92 (36%)	238	2.59	89 (35%)	105 (41%)	163 (64%)	34 (13%)
Climate	83	33 (40%)	114	3.45	34 (41%)	28 (34%)	25 (30%)	2 (%)
Sustainability	63	27 (43%)	62	2.30	27 (43%)	25 (40%)	35 (56%)	10 (16%)
Mining	37	15 (41%)	32	2.13	13 (35%)	14 (38%)	21 (57%)	3 (8%)
Renewable Energy	33	6 (18%)	19	3.17	23 (70%)	21 (64%)	15 (45%)	2 (6%)
Waste	13	5 (38%)	7	1.40	7 (54%)	6 (46%)	10 (77%)	4 (31%)
Nuclear	6	3 (50%)	4	1.33	2 (33%)	1 (17%)	5 (83%)	1 (17%)
Pollution	8	2 (25%)	2	1.00	2 (25%)	2 (25%)	4 (50%)	0
Grand Total	497	183 (37%)	478	2.61	197 (40%)	202 (41%)	278 (56%)	56 (11%)

Of the 478 online actions, 363 (76%) were petitions. Other types of online actions include pledges (n=46) such as Surfrider Foundation's 'Take the pledge to rise above plastics', online one click emails (n = 53), online submissions (n = 2), campaign signups (n = 7) and declarations (n = 4). A small but interesting trend is in the development of other miscellaneous types of online actions. These included options to switch your power supplier in one click, resulting in a donation to the organization (e.g., The Hub Foundation, GetUp!), or an online voting option 'South Australia Votes: Solar thermal or gas for Repower Port Augusta' (Victorian Climate Action Network). However, these were very rare, totaling just 24 (5%) of the 478 identified online actions. Just under half of sites offer the opportunity to subscribe to e-newsletters online. Despite the low prevalence of staff mentioned across websites (91 of the 497 groups, 18%), only 202 organizations (41%) include a specific request for volunteers on their website, and only 56% requested donations. Only 105 groups (21%) give any indication of specific items or activities that these donations will fund. Lastly, 56 groups' websites (11%) included an online shop (e.g. selling promotional material).

Campaigns and Targets

This section addresses RQ2 which asks about the targets of EMO campaigns and how they vary across issue focus and type of tactic.

Campaigns and Projects

In total 901 campaigns were identified across 294 groups, with 59% of the organizations undertaking some form of campaigning (see Table 4). The remaining 203 groups stated that they undertake some other form of advocacy and/or lobbying. While the study population was selected on the basis of undertaking advocacy, 209 of the groups (42%)

also name one or more projects that they run. Projects differ from campaigns in that they directly involve environmental remediation activities such as “revegetation, wildlife rehabilitation, plant and animal pest control, land management, and covenanting” (4.82 Australian Government, 2016, pp. 46-47).

Table 4: Campaigns and Projects for each Type of Issue Focus

Issue Focus	Total Groups	Campaigns				Projects
		Campaigning Groups	Number of Campaigns			Groups with Projects
			N	N	Maximum/Group	Avg. Campaigns/Group
Conservation & Protection	254	169 (67%)	603	47	3.57	114 (45%)
Climate	83	28 (34%)	62	9	2.21	27 (33%)
Sustainability	63	35 (56%)	91	17	2.60	39 (62%)
Mining	37	28 (76%)	40	10	1.43	1 (3%)
Renewable Energy	33	16 (48%)	35	22	2.19	22 (67%)
Waste	13	10 (77%)	57	19	5.70	6 (46%)
Pollution	8	3 (38%)	6	5	2.00	-
Nuclear	6	5 (83%)	7	3	1.40	-
Grand Total	497	294 (59%)	901	47	2.64	209 (42%)

There was considerable variation in how campaigning is undertaken: some groups run individual campaigns, some describe themselves as a campaign, and some state that they are a group that engages in campaigning activity. Campaign information provided online ranged from a simple list (for example, Hills Climate Action Group with nine campaigns) to separate campaign webpages with detailed information, associated actions and further links.

Of the 294 groups who run campaigns, 62 (12.4%) call themselves a campaign. Many of these have developed out of alliances of large national groups, such as ‘Stop the Super Trawlers’, ‘Sun Powered Queensland’ and ‘Stand up for Nature’. Of the remaining 232 groups, 193 (38.8%) run 901 individually named campaigns. Climate groups have the lowest prevalence of named campaigns (28/83, 34%), with the majority of activity by these groups instead described as general advocacy.

Conservation and protection issue groups have the highest quantity of projects, with 45% of all groups having at least one project named on their website. Examples include ‘Turn Off the Tap’ (a water conservation project of the Port Philip Eco Centre), or the ‘Marine Debris Challenge Project’ (a waste removal project of the Positive Change for Marine Life). In contrast, mining, nuclear and pollution issue groups have no stated projects on their websites at all.

Each of the 901 named campaigns was reviewed to identify both the issue and the target. In 189 (21%) campaigns no target was stated. Where targets were stated, these were grouped into four categories: political (such as a local or federal government, a particular politician or political candidates), businesses /institutions (such as a mining company or university), individuals, or community groups.

Table 5: Campaign Issues and Targets

Issue Focus	Total		Targets				
	Campaigns	Targets	Political	Individual	Business/Institution	Community group	Unknown
			N (%)	N (%)	N (%)	N (%)	N (%)
Conservation & Protection	603	637	365 (57%)	73 (11%)	54 (8%)	7 (1%)	138 (22%)
Sustainability	91	95	40 (42%)	21 (22%)	9 (9%)	3 (3%)	22 (23%)
Climate	62	76	22 (29%)	26 (34%)	19 (25%)	7 (9%)	2 (3%)
Waste	57	63	10 (16%)	26 (41%)	10 (16%)	2 (2%)	15 (24%)
Mining	40	40	28 (70%)	4 (10%)	4 (10%)	-	4 (10%)
Renewable Energy	35	35	21 (60%)	10 (29%)	1 (3%)	-	3 (9%)
Nuclear	7	8	6 (75%)	1 (13%)	1 (13%)	-	-
Pollution	6	6	1 (17%)	-	-	-	5 (83%)
Total	901	960	493 (51%)	161 (17%)	98 (10%)	19 (2%)	189 (20%)

Note: Fifty campaigns had more than one target, bringing the total to 960 targets identified across 901 campaigns

Campaign Targets

Of the 901 campaigns named on the study population websites, just over half (493/960, 51%) of those with stated targets were directed at governments, politicians or political candidates (see Table 5). The highest proportion of political targets are found in mining issue groups. Conservation and protection, mining and nuclear groups were heavily skewed towards political targets, whereas climate campaigns were evenly distributed across all target categories. A substantial proportion of renewable energy groups focused on the individual, mirrored by waste, climate and sustainability groups.

Discussion

This paper used the online communications of EMOs to construct a rich and comprehensive dataset representing the diversity of groups active within the Australian environmental advocacy movement ecosystem. Our findings show first, that conservation and protection remains the dominant environment issue across EMOs engaged in advocacy. However, there has been a substantial growth of renewable energy, mining and climate change groups since the turn of the 21st century. Across the study population local grassroots advocacy dominates, with 47% of groups operating at a local scale and 66% of climate change groups working at this level. This demonstrates that EMOs are rising to the challenge of driving a grassroots response to our global environmental issues. Given that research on environmental advocacy tends to focus on larger national groups (Bond, 2012; E Johnson et al., 2009), these findings challenge the generalizability of their findings to analysis of environmental advocacy and how it is communicated. Correspondingly, our findings support those calling for an increased understanding of grassroots advocacy within the environmental

movement (cf. Bond & Froome, 2010; Mihaylov & Perkins, 2015), and in particular, whether it is the newer issue of climate change that has provided a boost to the movement (O'Brien, 2012).

Second, our findings show that the insider/outside action repertoire is not reflected in either the online or offline actions organized by EMOs in our study population. In this dataset, EMOs almost exclusively use normative (i.e., insider) collective action tactics in both online and offline settings. In particular, online actions were entirely normative and generally one click activities that required no additional commitment (cf. Van Laer & Van Aelst, 2010). Only a small percentage of offline activities were protest type actions. Of course, organizations may choose to not promote radical, or confrontational actions – either on- or offline - on their websites. It is feasible that communication about outsider tactics such as civil disobedience activities may be occurring, but be hidden from public view by design (cf. Cammaerts, 2012; Schock, 2003). Even so, our data appears to show that the proportion of ‘insider’ collective actions is extremely high in Australia. Australia, as an English speaking western, democratic country, shares cultural and political similarities with other countries (e.g., Canada, UK, USA), and it is possible that this pattern may also be found in the environmental movement of those nations. Future research is needed to test this possibility.

Some researchers have argued that the lack of protest and the prevalence of service provision activities such as environmental projects could be linked (cf. Hadden & Jasny, 2017). Choice of group activities may depend on grant funding, which often favors environmental remediation rather than advocacy (Brulle & Rootes, 2015; Dalton, 2015; Rootes, 2007). Furthermore, competition over funding or additional requirements resulting from successful grant acquisition may divert resources away from advocacy activities (cf. Almog-Bar & Schmid, 2014; Child & Grønbjerg, 2007; Zhan & Tang, 2013). Our findings

highlight the need for more research on what influences the choice between normative and non-normative environmental advocacy.

Third, our findings also show that the most common offline activity was information sharing. This may reflect a misplaced trust in the efficacy of information to influence behavioral or political engagement (i.e., the information deficit model: [Bak, 2001; Sturgis & Allum, 2004]). This strategy has been shown to be insufficient to raise concern or change behavior (Moser & Dilling, 2011). Another possible reason for the predominance of information sharing and eco-activities may have been the heavy reliance on volunteer resources across the study population, with only 69 of the 497 EMOs stating that they have paid staff. Our data shows that a significant quantity of volunteer time may be dedicated to organizational administrative requirements such as AGMs and meetings. Managing organizational resources effectively, while key to the effectiveness of social movements (McCarthy & Zald, 1977), may also consume a substantial amount of organizational resources in itself, leaving less time for advocacy activities. For EMOs operating entirely through volunteer efforts, these findings support previous research highlighting the challenges of maintaining advocacy activities at the grassroots level (Feola & Nunes, 2014; Middlemiss & Parrish, 2010). However, despite these challenges, our data indicate a vast pool of energy and resources are being put into grassroots environmental advocacy. This groundswell, while appearing to focus on non-radical forms of collective action mobilisation, may, in fact, reflect more successful mechanisms to drive social change by lowering participation thresholds for supporters (Van Laer & Van Aelst, 2010). Future research could measure participation in the range of activities to ascertain the degree to which they affect supporter mobilisation.

Finally, political targets constituted just over half of the campaign targets, and dominated campaigns focused on traditional environmental concerns such as conservation and protection, nuclear, and pollution issues. For other issues, though, political targets were not predominant. This may indicate that assessments of favorable political opportunity are not a crucial factor in influencing organizations' strategic decision-making about their advocacy activities (cf. Meyer, 2004; Tilly, 1978). In particular, the issue of climate change demonstrated a greater diversity of campaign targets. This diversification may be beneficial for environmental advocacy outcomes, given that strategies such as those focused on corporate shaming (Bloomfield, 2014), or shareholder activism (cf. Gritten, González-Olabarría, Mola-Yudego, & Domínguez, 2012) have been shown to be effective. But the scope of such action is narrower, compared to sector-wide policy changes that might be introduced politically. Similarly, it is unclear whether campaigns targeting individuals in waste, climate and renewable energy issues are more or less effective than campaigns targeting policy level change. Research on individual behavior change programs has demonstrated limitations to their effectiveness in creating sustainable and measurable change (Brulle, 2010; Jugert et al., 2016; Thøgersen & Crompton, 2009). Given the urgency of climate change and the prevalence of campaigns targeting individual activities in our dataset, further research on the possible link between individual action and social change is recommended.

Limitations

Websites are often the product of a small number of people and may therefore be subject to the same individual-level bias and resource constraint issues found in offline communications and activities (Ackland & O'Neil, 2011; Takahashi, Edwards, Roberts, & Duan, 2015).

Merging website data with event protest catalogues or social media analysis would diversify and expand the study population to potentially capture a greater number of EMOs engaged in advocacy but without the resources to create websites. In addition, future research could delve further into advocacy outcomes to better understand factors that influence campaign success and failure. A high level of activity and public engagement is an admirable achievement for any movement; however, it is important to understand the level of success achieved by EMOs, and how different targets, tactics or topics might link to success.

Conclusion

Past research on environmental movement organizations has shown their resilience over time, and ability to adapt and mobilize against the salient environmental threats of the day. Our study paints a picture of a diverse and strong environmental advocacy ecosystem within the Australian environmental movement, which is engaging many people across vast geographical areas on a multiplicity of environmental issues. In particular, we find a predominance of small, local groups using insider tactics. This study highlights the importance of both using multiple sources for communications analysis, and the value of continuing the growing body of work incorporating grassroots activities into social movement analysis. Given the importance of online communications in social movements in the 21st century, the findings can help to inform future research on collective action mobilization. Our data demonstrates that the groundswell of grassroots activity demanded by the authors of the second Warning to Humanity exists (Ripple et al., 2017). The challenge for environmental advocacy organizations is to develop the mechanisms for more effectively mobilizing increasing numbers of participants in this groundswell: in doing so, we will move closer to solving our collective environmental challenges.

References

- ABS. (2016). Household Use of Information Technology. Canberra: Australian Government.
- Ackland, R., & O'Neil, M. (2011). Online collective identity: The case of the environmental movement. *Social Networks*, 33(3), 177-190. doi:10.1016/j.socnet.2011.03.001
- Agarwal, N., Lim, M., & Wigand, R. T. (2011). *Collective action theory meets the blogosphere: A new methodology*. Paper presented at the International Conference on Networked Digital Technologies.
- Agnone, J. (2007). Amplifying Public Opinion: The Policy Impact of the U.S. Environmental Movement. *Social Forces*, 85(4), 1593-1620. doi:10.1353/sof.2007.0059
- Almog-Bar, M., & Schmid, H. (2014). Advocacy activities of nonprofit human service organizations: A critical review. *Nonprofit and Voluntary Sector Quarterly*, 43(1), 11-35.
- Andrews, K., & Caren, N. (2010). Making the news: Movement organizations, media attention, and the public agenda. *American Sociological Review*, 75(6), 841-866.
- Andrews, K., Edwards, B., Al-Turk, A., & Hunter, A. K. (2016). Sampling Social Movement Organizations. *Mobilization: An International Quarterly*, 21(2), 231-246.
- Australian Government. (2012). Australian Charities and Not-for-profits Commission website. Retrieved from http://www.acnc.gov.au/ACNC/Reg/Charities_elections_and_advocacy_.aspx
- Australian Government. (2016). *Inquiry into the Register of Environmental Organisations*. Retrieved from <http://apo.org.au/node/63915/cite>
- Australian Government. (2018). Register of Environmental Organisations. Retrieved from <http://www.environment.gov.au/>
- Bak, H. J. (2001). Education and public attitudes toward science: Implications for the “deficit model” of education and support for science and technology. *Social Science Quarterly*, 82(4), 779-795.
- Barr, S., & Pollard, J. (2017). Geographies of Transition: Narrating environmental activism in an age of climate change and ‘Peak Oil’. *Environment and Planning A*, 49(1), 47-64. doi:10.1177/0308518X16663205
- Bimber, B., Flanagin, A. J., & Stohl, C. (2005). Reconceptualizing collective action in the contemporary media environment. *Communication Theory*, 15(4), 365-388.
- Bloomfield, M. J. (2014). Shame campaigns and environmental justice: corporate shaming as activist strategy. *Environmental Politics*, 23(2), 263.

- Bond, M. (2012). *Grassroots Climate Action in Australia: Visions, Practices and Innovation*. Griffith University, Retrieved from <https://www120.secure.griffith.edu.au/rch/items/e654230b-e590-4854-8079-618ebd4a8629/1/>
- Bond, M., & Froome, C. (2010). Localizing climate change: stepping up local climate action. *Management of Environmental Quality: An International Journal*, 21(2), 214-225. doi:10.1108/14777831011025553
- Bratman, E., Brunette, K., Shelly, D. C., & Nicholson, S. (2016). Justice is the goal: divestment as climate change resistance. *Journal of Environmental Studies and Sciences*, 6(4), 677-690. doi:10.1007/s13412-016-0377-6
- Brulle, R. (2010). From Environmental Campaigns to Advancing the Public Dialog: Environmental Communication for Civic Engagement. *Environmental Communication*, 4(1), 82-98. doi:10.1080/17524030903522397
- Brulle, R., & Rootes, C. (2015). Environmental movements. In *International Encyclopedia of the Social & Behavioral Sciences* (pp. 763-768): Wiley Online Library.
- Brulle, R., Turner, L., Carmichael, J., & Jenkins, J. (2007). Measuring social movement organization populations: A comprehensive census of US environmental movement organizations. *Mobilization: An International Quarterly*, 12(3), 255-270.
- Büchs, M. (2014). The role of environmental organisations in supporting carbon reduction: comparing direct and indirect involvement. *Environmental Politics*, 23(6), 1003-1022. doi:10.1080/09644016.2014.921456
- Cammaerts, B. (2012). Protest logics and the mediation opportunity structure. *European Journal of Communication*, 27(2), 117-134. doi:10.1177/0267323112441007
- Carmin, J., & Balsaer, D. B. (2002). Selecting repertoires of action in environmental movement organizations: An interpretive approach. *Organization and Environment*, 15(4), 365-388.
- Chan, M. (2017). Media Use and the Social Identity Model of Collective Action: Examining the Roles of Online Alternative News and Social Media News. *Journalism & Mass Communication Quarterly*, 94(3), 663-681. doi:10.1177/1077699016638837
- Chapman, J., Parvazian, S., & Skinner, N. (2017). How do Australians rate as environmental citizens? An international comparative analysis of environmental concern and action. *Australasian Journal of Environmental Management*, 24(2), 117-132. doi:10.1080/14486563.2017.1310674
- Child, C. D., & Grønbjerg, K. A. (2007). Nonprofit Advocacy Organizations: Their Characteristics and Activities. *Social Science Quarterly*, 88(1), 259-281. doi:10.1111/j.1540-6237.2007.00457.x

- Cox, J. R., & Pezzullo, P. C. (2016). *Environmental Communication and the Public Sphere* (4th ed.). Los Angeles: SAGE.
- Dalton, R. (2015). Waxing or waning? The changing patterns of environmental activism. *Environmental Politics*, 24(4), 530-552. doi:10.1080/09644016.2015.1023576
- Dalton, R., Recchia, S., & Rohrschneider, R. (2003). The Environmental Movement and the Modes of Political Action. *Comparative Political Studies*, 36(7), 743-772.
- Diani, M. (1992). The concept of social movement. *The Sociological Review*, 40(1), 1-25.
- Downie, C. (2017). Fighting for King Coal's crown: Business actors in the US coal and utility industries. *Global Environmental Politics*, 17(1), 21-39.
- Feola, G., & Nunes, R. (2014). Success and failure of grassroots innovations for addressing climate change: The case of the Transition Movement. *Global Environmental Change*, 24, 232-250. doi:https://doi.org/10.1016/j.gloenvcha.2013.11.011
- Giugni, M., & Grasso, M. T. (2015). Environmental Movements in Advanced Industrial Democracies: Heterogeneity, Transformation, and Institutionalization. *Annual Review of Environment and Resources*, 40(1), 337-361. doi:10.1146/annurev-environ-102014-021327
- Gritten, D., González-Olabarría, J., Mola-Yudego, B., & Domínguez, G. (2012). Environmental campaigns against forest companies: What are the campaigns trying to achieve? *Forest Systems*, 21(2), 247-258.
- Grønbjerg, K., & Clerkin, R. (2005). Examining the landscape of Indiana's nonprofit sector: Does what you know depend on where you look? *Nonprofit and Voluntary Sector Quarterly*, 34(2), 232-259.
- Guo, C., & Saxton, G. D. (2014). Tweeting social change: How social media are changing nonprofit advocacy. *Nonprofit and Voluntary Sector Quarterly*, 43(1), 57-79.
- Hadden, J., & Jasny, L. (2017). The power of peers: how transnational advocacy networks shape NGO strategies on climate change. *British Journal of Political Science*, 1-23.
- Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication methods and measures*, 1(1), 77-89.
- Hisschemöller, M., & Sioziou, I. (2013). Boundary organisations for resource mobilisation: enhancing citizens' involvement in the Dutch energy transition. *Environmental Politics*, 22(5), 792-810.
- Johnson, E., & Prakash, A. (2007). NGO research program: a collective action perspective. *Policy Sciences*, 40(3), 221-240.
- Johnson, E., Saito, Y., & Nishikido, M. (2009). The organizational demography of Japanese environmentalism. *Sociological Inquiry*, 79(4), 481-504.

- Joyce, M. (2018). Picking the Best Intercoder Reliability Statistic for Your Digital Activism Content Analysis. *Digital Activism Research Project*. Retrieved from <http://digital-activism.org/2013/05/picking-the-best-intercoder-reliability-statistic-for-your-digital-activism-content-analysis/>
- Jugert, P., Greenaway, K. H., Barth, M., Büchner, R., Eisentraut, S., & Fritsche, I. (2016). Collective efficacy increases pro-environmental intentions through increasing self-efficacy. *Journal of Environmental Psychology*, *48*, 12-23.
- Katz-Kimchi, M., & Manosevitch, I. (2015). Mobilizing Facebook Users against Facebook's Energy Policy: The Case of Greenpeace Unfriend Coal Campaign. *Environmental Communication*, *9*(2), 248-267. doi:10.1080/17524032.2014.993413
- Laestadius, L. I., Neff, R. A., Barry, C. L., & Frattaroli, S. (2014). “We don’t tell people what to do”: An examination of the factors influencing NGO decisions to campaign for reduced meat consumption in light of climate change. *Global Environmental Change*, *29*, 32-40. doi:<http://dx.doi.org/10.1016/j.gloenvcha.2014.08.001>
- Lester, L., & Hutchins, B. (2012). The power of the unseen: environmental conflict, the media and invisibility. *Media, Culture and Society*, *34*(7), 847-863. doi:10.1177/0163443712452772
- Lewis, R., O’Donovan, G., & Willett, R. (2017). The Effect of Environmental Activism on the Long-run Market Value of a Company: A Case Study. *Journal of Business Ethics*, *140*(3), 455-476. doi:10.1007/s10551-015-2686-1
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human communication research*, *28*(4), 587-604.
- Louis, W. (2009). Collective Action-and Then What? *Journal of Social Issues*, *65*(4), 727-748.
- McCarthy, J. D., & Zald, M. N. (1977). Resource mobilization and social movements: A partial theory. *American Journal of Sociology*, *82*(6), 1212-1241.
- McDonald, M. (2016). Bourdieu, environmental NGOs, and Australian climate politics. *Environmental Politics*, *25*(6), 1058-1078. doi:10.1080/09644016.2016.1196968
- Meyer, D. S. (2004). Protest and political opportunities. *Annu. Rev. Sociol.*, *30*, 125-145.
- Middlemiss, L., & Parrish, B. D. (2010). Building capacity for low-carbon communities: The role of grassroots initiatives. *Energy Policy*, *38*(12), 7559-7566. doi:10.1016/j.enpol.2009.07.003
- Mihaylov, N. L., & Perkins, D. D. (2015). Local environmental grassroots activism: contributions from environmental psychology, sociology and politics. *Behavioral Sciences*, *5*(1), 121-153.

- Moser, S. C., & Dilling, L. (2011). Communicating climate change: closing the science-action gap. *The Oxford handbook of climate change and society*, 161-174.
- O'Brien, T. (2012). Environmental protest in New Zealand (1997–2010). *The British Journal of Sociology*, 63(4), 641-661.
- O'Brien, T. (2013). Fragmentation or Evolution? Understanding Change Within the New Zealand Environmental Movement. *Journal of Civil Society*, 1-13.
doi:10.1080/17448689.2013.818267
- Obar, J. A., Zube, P., & Lampe, C. (2012). Advocacy 2.0: An analysis of how advocacy groups in the United States perceive and use social media as tools for facilitating civic engagement and collective action. *Journal of information policy*, 2, 1-25.
- Porta, D., & Rucht, D. (2002). The dynamics of environmental campaigns. *Mobilization: An International Quarterly*, 7(1), 1-14.
- Richards, J., & Heard, J. (2005). European Environmental NGOs: Issues, Resources and Strategies in Marine Campaigns. *Environmental Politics*, 14(1), 23-41.
doi:10.1080/0964401042000310169
- Ripple, W., Wolf, C., Newsome, T., Galetti, M., Alamgir, M., Crist, E., . . . Laurance, W. (2017). World Scientists' Warning to Humanity: A Second Notice. *BioScience*, 67(12), 1026-1028. doi:10.1093/biosci/bix125
- Rootes, C. (1999). Environmental movements: From the local to the global. *Environmental Politics*, 8(1), 1-12. doi:10.1080/09644019908414435
- Rootes, C. (2007). Acting locally: The character, contexts and significance of local environmental mobilisations. *Environmental Politics*, 16(5), 722-741.
doi:10.1080/09644010701640460
- Rucht, D. (1990). The strategies and action repertoires of new movements. In D. R & M. Kuechler (Eds.), *Challenging the Political Order: New Social and Political Movements in Western Democracies*. Cambridge Polity Press.
- Schäfer, M. S. (2012). Online communication on climate change and climate politics: a literature review. *Wiley Interdisciplinary Reviews: Climate Change*, 3(6), 527-543.
- Schock, K. (2003). Nonviolent action and its misconceptions: Insights for social scientists. *Political Science and Politics*, 36(4), 705-712.
- Stein, L. (2009). Social movement web use in theory and practice: a content analysis of US movement websites. *New Media and Society*, 11(5), 749-771.
doi:10.1177/1461444809105350
- Stolle, D., Hooghe, M., & Micheletti, M. (2005). Politics in the supermarket: Political consumerism as a form of political participation. *International political science review*, 26(3), 245-269.

- Sturgis, P., & Allum, N. (2004). Science in society: re-evaluating the deficit model of public attitudes. *Public Understanding of Science*, 13(1), 55-74.
- Takahashi, B., Edwards, G., Roberts, J. T., & Duan, R. (2015). Exploring the Use of Online Platforms for Climate Change Policy and Public Engagement by NGOs in Latin America. *Environmental Communication*, 1-20. doi:10.1080/17524032.2014.1001764
- Tarrow, S. G. (2011). *Power in movement: Social movements and contentious politics*: Cambridge University Press.
- Thøgersen, J., & Crompton, T. (2009). Simple and painless? The limitations of spillover in environmental campaigning. *Journal of Consumer Policy*, 32(2), 141-163.
- Thörn, H., & Svenberg, S. (2016). 'We feel the responsibility that you shirk': movement institutionalization, the politics of responsibility and the case of the Swedish environmental movement. *Social Movement Studies*, 15(6), 593-609. doi:10.1080/14742837.2016.1213162
- Tilly, C. (1978). *From mobilization to revolution*. New York: Random House.
- Tranter, B. (2009). Leadership and change in the Tasmanian environment movement. *The Leadership Quarterly*, 20(5), 708-724. doi:10.1016/j.leaqua.2009.06.009
- Turner, R. L., & Killian, L. (1987). *Collective Behavior* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Van Laer, J., & Van Aelst, P. (2010). Internet and social movement action repertoires: opportunities and limitations. *Information, Communication & Society*, 13(8), 1146-1171. doi:10.1080/13691181003628307
- Wright, S. C., Taylor, D. M., & Moghaddam, F. M. (1990). Responding to membership in a disadvantaged group: From acceptance to collective protest. *Journal of Personality and Social Psychology*, 58(6), 994-1003.
- Yasseri, T., Hale, S. A., & Margetts, H. (2013). Modeling the rise in internet-based petitions. *arXiv preprint arXiv:1308.0239*.
- Zhan, X., & Tang, S.-Y. (2013). Political opportunities, resource constraints and policy advocacy of environmental NGOs in China. *Public Administration*, 91(2), 381-399.
- Zhang, Y., & Zhao, D. (2018). The Ecological and Spatial Contexts of Social Movements. In *The Wiley Blackwell Companion to Social Movements* (pp. 98-114).