



# FRACKING & PARKLAND

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Understanding the Impact of Hydraulic  
Fracturing on Public Park Usage



# RESEARCH REPORT

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# Executive Summary

Public parks and recreational facilities are important nodes within multi-scale community systems found across North America, Europe, and Australasia. In addition to offering protections to the environment and wildlife, they provide numerous opportunities for individuals to participate in healthy activities across skill levels and age. The programs and services offered in local, provincial–state, and national parks allow for citizens from diverse population groups to pursue sport, recreation, and leisure (Godbey, Caldwell, Floyd, & Payne, 2005). The preservation and continued accessibility of these spaces—and the natural environments of which they are a part—are therefore paramount to fostering healthy lifestyles and communities.

Parks and recreation spaces are significant to a number of stakeholders; while less apparent than park visitors and community members, energy companies are becoming increasingly active users because of the valuable pockets of natural gas that underlie many public spaces. Following the innovation of hydraulic fracturing, or fracking, to effectively collect natural gas, there has been growing interest in placing exploration and extraction wells in or adjacent to a number of public park and forest systems across Europe and North America (e.g., Cowell, 2013; Rowland & Drabold, 2014). Opponents of fracking leases on public land have argued that in addition to air contaminants and polluted greywater on recreational fields, park acreage will be lost to fracking operations and park attendance will decrease (e.g., Gardner, 2014). For administrators and policymakers, these outcomes would be especially troubling given the role that public green spaces are expected to play in reversing the decline in youth sport participation (The Aspen Institute, 2015) and creating new generations of physically active individuals and communities.

There is a growing body of literature focused on environmental issues in park management, but this study represents one of the first investigations specifically looking at fracking operations related to park usage and participation. The purposes of this study are to explore the parkland–fracking link and to consider the extent—if any—to which fracking operations taking place in or around designated public parks affect expectations of continued visitation and participation. In other words, if fracking operations were to take place on or near public parkland, how would visitation be affected—or, what do currently active park users predict will happen?

# Executive Summary continued

## About the Sample

**A total of 255 individuals representing five Appalachian states completed the survey.** The sample includes Pennsylvanians (42%), Ohioans (28%), Tennesseans (13%), Kentuckians (13%), and West Virginians (3%). Most respondents categorize their community as suburban (52%), followed by rural (26%) and urban (22%). More than half of the sample was female (58%, compared to 42% male). Less than half of respondents (44%) hold a bachelor's degree or higher, and the average family income falls between \$50,000–\$74,999. Political affiliations were 42% Democrat, 33% Republican, and 25% something else. Finally, a large majority consider themselves to be either active or passive environmentalists (62%), while 35% did not. [See pages 5–6.](#)

**All respondents are park users.** Each survey taker reported visiting a local, state, or national park at least once per year, with more than 40% visiting at least once per month. The most popular type of park is local (46%), then state (41%), then national (13%). The most popular park activities are relaxation, picnicking, and running or walking for fitness. [See page 6.](#)

## Key Findings

**In general, most respondents expressed familiarity with the process of hydraulic fracturing.** More than 60% reported being either somewhat familiar or very familiar with the term “hydraulic fracturing”; on the other hand, 10% had never heard of the term before taking the survey. Nearly one-third of the sample lives in a region impacted (either currently or expected to be) by fracking. Most respondents (40%) oppose fracking in any form, while 23% are supportive, 25% are on the fence, and 12% are unsure. [See page 7.](#)

**Park users are concerned fracking that occurs on or near their public parks will negatively impact their participation.** Only one-third of participants indicated their willingness to participate in recreational activities near fracking operations (33%, compared to 38% unwilling and 29% neutral). More than half of all respondents expressed: concern that a fracking operation would limit their ability to access their park (52%); willingness to travel further to visit a park unaffected by fracking (56%); and support for legislation prohibiting fracking near their favorite park (58%). [See page 10.](#)

**In general, park users believe that fracking on public land is unnecessary and bad for the environment.** More park users agree fracking on public land is bad for the environment (48%) than those who agree fracking has no impact on the environment (16%). More park users also support banning fracking on public land (46%, as opposed to 20% who agree with promoting it). 50% of respondents believe fracking on public land should be subject to greater oversight and regulation, while 13% believe it should be subject to less oversight and regulation. When neutral responses are removed from calculation, the contrasts are much starker. [See pages 8–9.](#)

**While park users generally hold strong opinions that fracking has a negative impact on the natural environment, most park users surveyed for this study are less critical when it comes to its economic benefits.** Park users attitudes toward the economic impact of fracking on public land were far more neutral (e.g., regarding its contribution to traffic and gas prices), and in some cases, were positive (such as its impact on the creation of temporary jobs). [See page 9.](#)

# Perceptions of Hydraulic Fracturing Near Public Parks and Recreational Facilities: An Exploratory Investigation

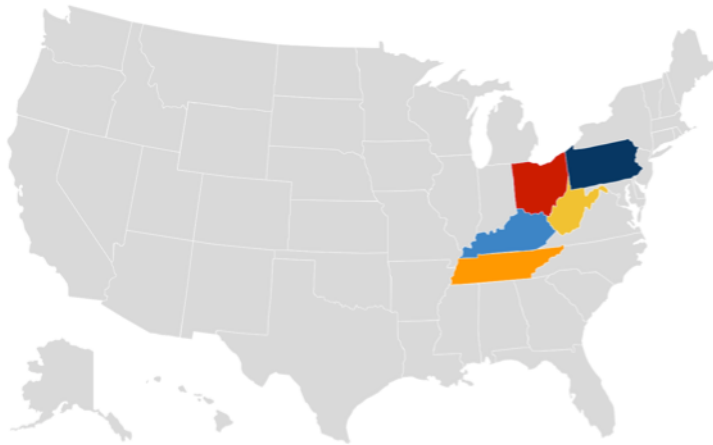
For this study, we conducted a preliminary exploration of the potential effects of fracking on or near publicly accessible parkland, focusing in particular on the possible implications for park users and administrators. To achieve this aim, a purposive sampling technique was used to distribute surveys to self-identified park users living in five states in the Appalachian Basin of the eastern US; this region was selected because it is home to a number of state and national parks—public land used for sport and recreation—currently considering or having already consented to fracking.

A 55-item survey was used to identify participants' views on a number of topics, including their general attitudes toward the environment, fracking and public policy, and fracking on parkland. The instrument was also used to assess park users' perceptions of the extent to which park-proximate fracking impacts their sport-participation levels (e.g., decline of public spaces of play, less resources for sport leagues, privatization of physical activity).

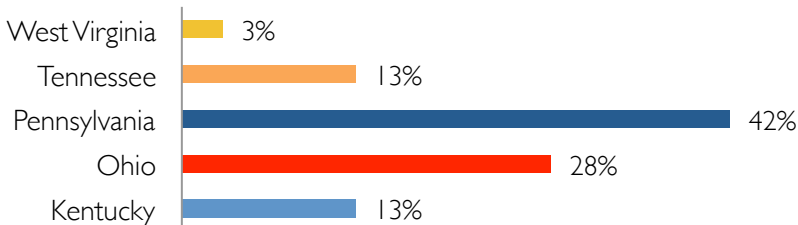
## About the Survey Participants

# 255

PARK USERS PARTICIPATED IN THE STUDY.



STATE OF RESIDENCE



## – DEMOGRAPHIC CHARACTERISTICS –

SELF-IDENTIFIED GENDER

**58%** **42%**  
female male

AVERAGE AGE

**35–44**  
years old

TYPE OF COMMUNITY



# About the Survey Participants continued

## – DEMOGRAPHIC CHARACTERISTICS –

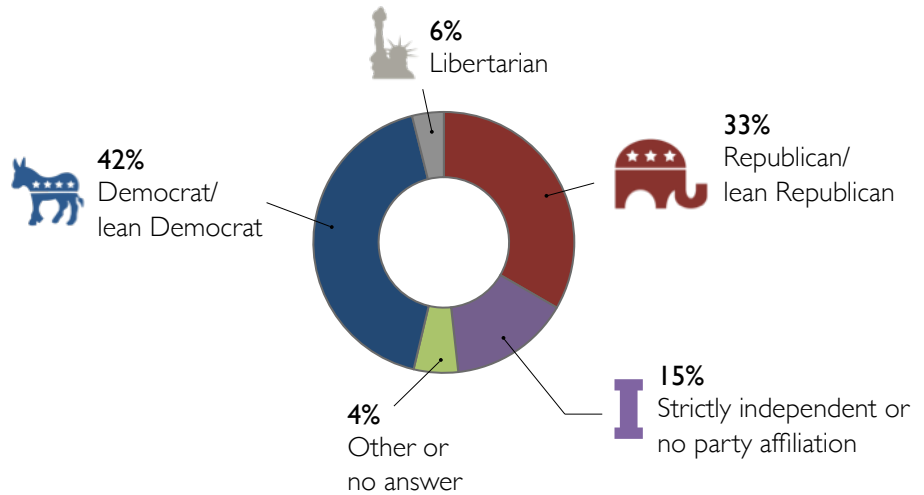
### HIGHEST LEVEL OF EDUCATION

- 19% high school grad. or equivalent
- 24% some college, no degree
- 13% associate's degree
- 26% bachelor's degree
- 14% master's degree
- 2% professional degree (ex. JD, MD)
- 2% doctoral degree

### AVERAGE FAMILY INCOME

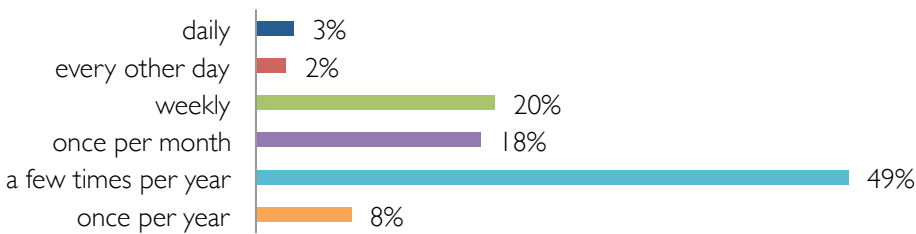
**\$50,000–\$74,999**

### POLITICAL AFFILIATION

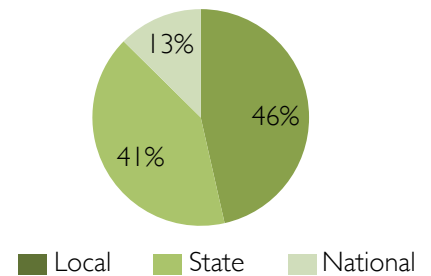


## – PARK USAGE –

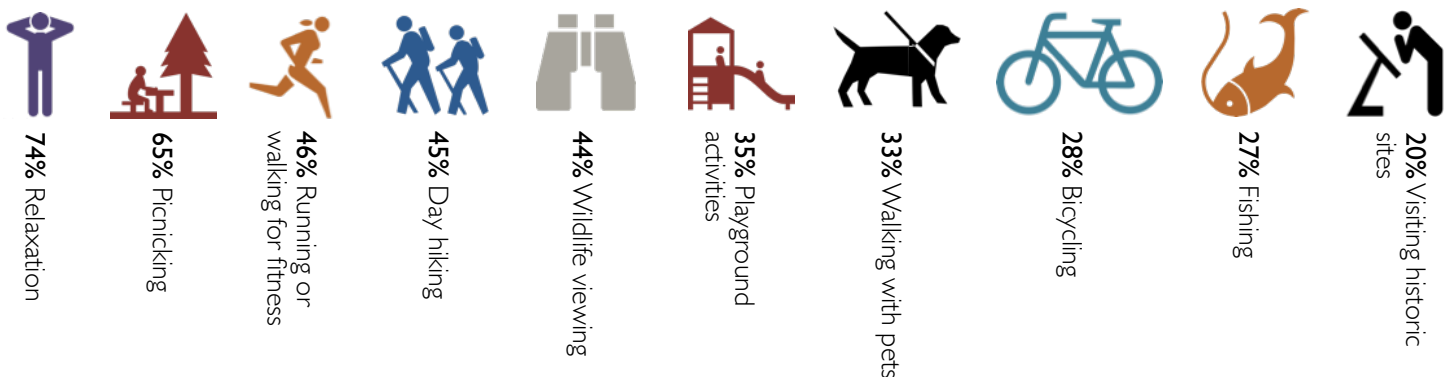
Q. IN THE AVERAGE YEAR, I VISIT MY LOCAL, STATE, OR NATIONAL PARKS:



Q. THE TYPE OF PARK I VISIT MOST OFTEN IS:



### TEN MOST FREQUENTLY CITED PARK ACTIVITIES

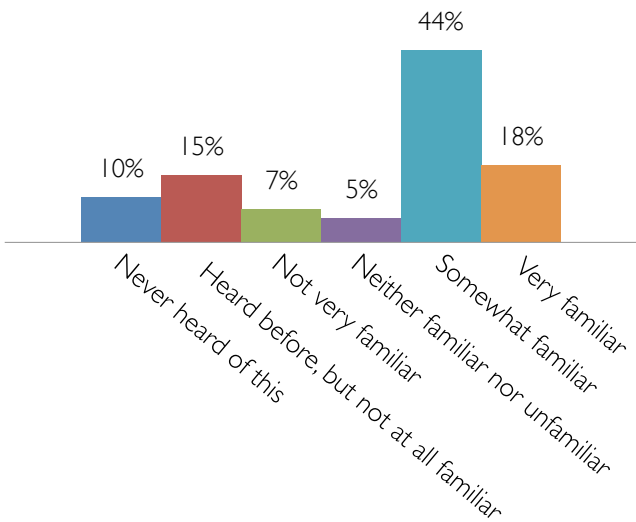




## Fracking and the Environment

– GENERAL ATTITUDES TOWARD FRACKING –

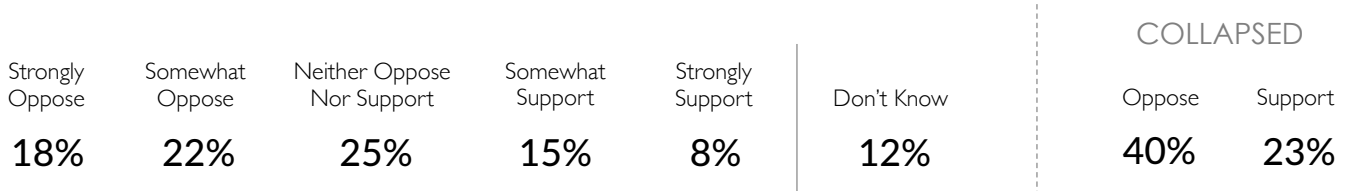
Q. HOW FAMILIAR ARE YOU WITH THE TERM HYDRAULIC FRACTURING?



Q. DO YOU LIVE IN A REGION WHERE FRACKING CURRENTLY OCCURS OR IS EXPECTED TO OCCUR IN THE NEAR FUTURE?



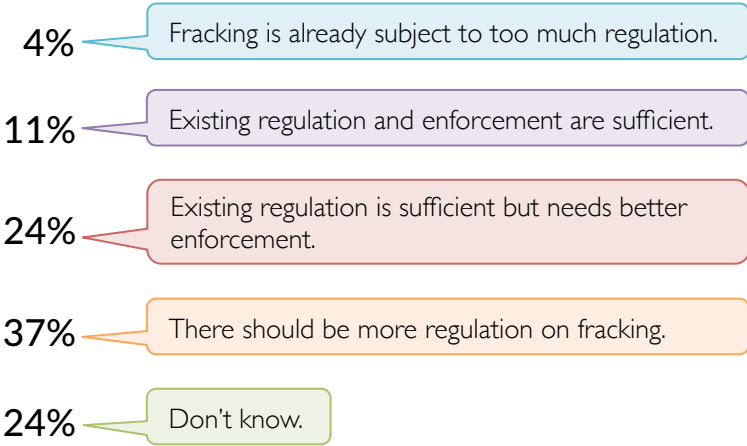
Q. BASED ON WHAT YOU KNOW OR HAVE HEARD, WHAT DO YOU THINK OF THE USE OF FRACKING TO EXTRACT FOSSIL FUELS?



# Fracking and the Environment continued

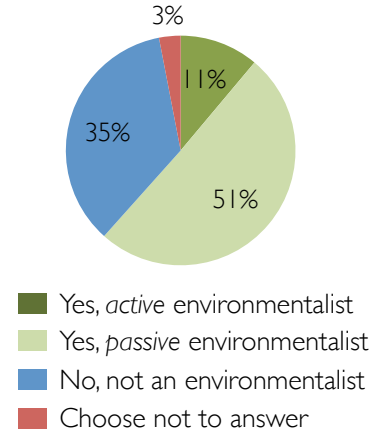
## – GENERAL ATTITUDES TOWARD FRACKING –

Q. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR FEELINGS ABOUT REGULATION FOR FRACKING?



## – ATTITUDES TOWARD THE ENVIRONMENT –

Q. DO YOU CONSIDER YOURSELF AN ENVIRONMENTALIST?



## Attitudes Toward Fracking on Public Land

### FRACKING ON PUBLIC LAND ...

### COLLAPSED WITH NEUTRAL REMOVED

Is not needed to meet current demand	Very Much Agree	Somewhat Agree	Neutral	Somewhat Agree	Very Much Agree	Is necessary to meet current demand	Not Needed	Necessary
	14%	17%	40%	20%	9%		52%	48%
Is bad for the environment	Very Much Agree	Somewhat Agree	Neutral	Somewhat Agree	Very Much Agree	Has no impact on the environment	Bad For Environment	No Impact
	27%	21%	36%	11%	5%		75%	25%
Should be banned	Very Much Agree	Somewhat Agree	Neutral	Somewhat Agree	Very Much Agree	Should be promoted	Ban	Promote
	23%	23%	34%	12%	8%		69%	31%
Should be subject to greater oversight and regulation	Very Much Agree	Somewhat Agree	Neutral	Somewhat Agree	Very Much Agree	Should be subject to less oversight and regulation	Greater Regulation	Less Regulation
	27%	23%	37%	7%	6%		79%	21%



# Attitudes Toward Fracking on Public Land continued

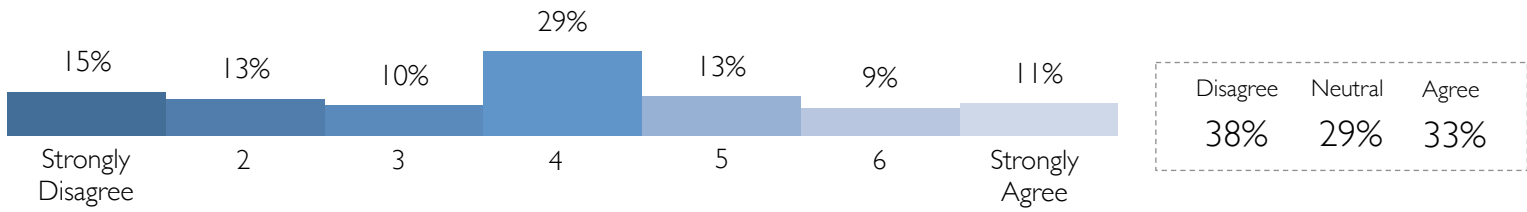
## FRACKING ON PUBLIC LAND ...

COLLAPSED  
WITH *NEUTRAL*  
REMOVED

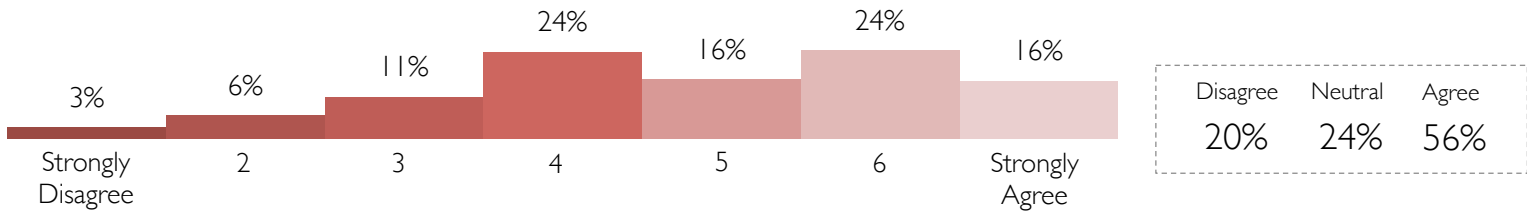
Does not contribute to U.S. energy independence	Very Much Agree <b>12%</b>	Somewhat Agree <b>27%</b>	Neutral <b>37%</b>	Somewhat Agree <b>16%</b>	Very Much Agree <b>8%</b>	Contributes to U.S. energy independence	No Contribution <b>62%</b>	Contribution <b>38%</b>
Creates traffic problems	Very Much Agree <b>8%</b>	Somewhat Agree <b>11%</b>	Neutral <b>55%</b>	Somewhat Agree <b>16%</b>	Very Much Agree <b>10%</b>	Does not cause traffic problems	Traffic Problems <b>41%</b>	No Traffic Problems <b>59%</b>
Does not lead to significantly lower gas prices	Very Much Agree <b>9%</b>	Somewhat Agree <b>15%</b>	Neutral <b>48%</b>	Somewhat Agree <b>18%</b>	Very Much Agree <b>10%</b>	Leads to significantly lower gas prices	No Change in Gas Prices <b>47%</b>	Lower Gas Prices <b>53%</b>
Has no effect on the local economy	Very Much Agree <b>6%</b>	Somewhat Agree <b>9%</b>	Neutral <b>46%</b>	Somewhat Agree <b>28%</b>	Very Much Agree <b>11%</b>	Is good for the local economy	No Effect on Local Economy <b>29%</b>	Good For Local Economy <b>71%</b>
Does not help create permanent jobs in the community	Very Much Agree <b>10%</b>	Somewhat Agree <b>22%</b>	Neutral <b>42%</b>	Somewhat Agree <b>17%</b>	Very Much Agree <b>9%</b>	Helps create permanent jobs in the community	No Effect on Job Creation <b>55%</b>	Permanent Jobs <b>45%</b>
Does not help create temporary jobs in the community	Very Much Agree <b>6%</b>	Somewhat Agree <b>6%</b>	Neutral <b>35%</b>	Somewhat Agree <b>37%</b>	Very Much Agree <b>16%</b>	Helps create temporary jobs in the community	No Effect on Job Creation <b>17%</b>	Temporary Jobs <b>83%</b>
Has more costs than benefits	Very Much Agree <b>15%</b>	Somewhat Agree <b>19%</b>	Neutral <b>46%</b>	Somewhat Agree <b>14%</b>	Very Much Agree <b>6%</b>	Has more benefits than costs	Costs > Benefits <b>64%</b>	Benefits > Costs <b>36%</b>

# Perceived Impact of Fracking on Park Usage

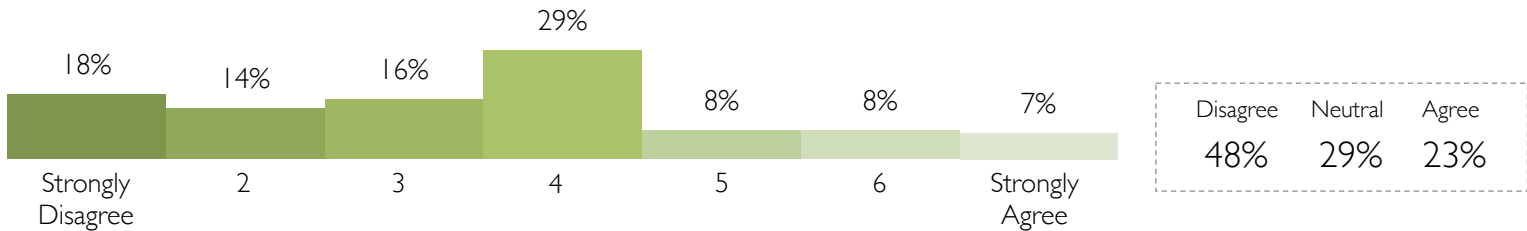
I AM WILLING TO PARTICIPATE IN RECREATIONAL ACTIVITIES NEAR A FRACKING OPERATION.



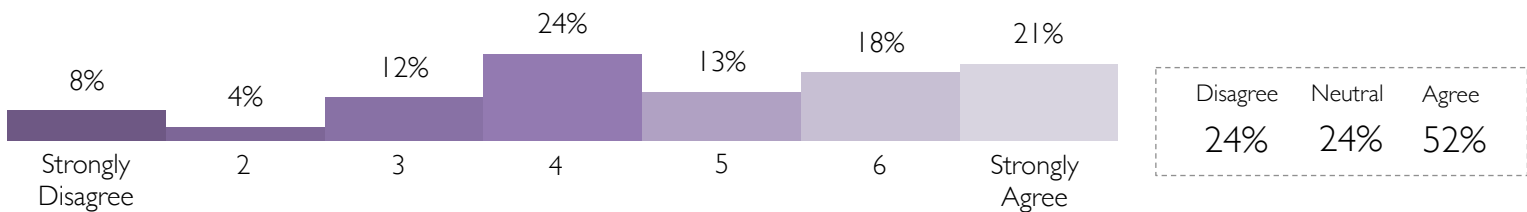
I AM WILLING TO TRAVEL FURTHER TO VISIT A PARK THAT WAS NOT AFFECTED BY FRACKING OPERATIONS.



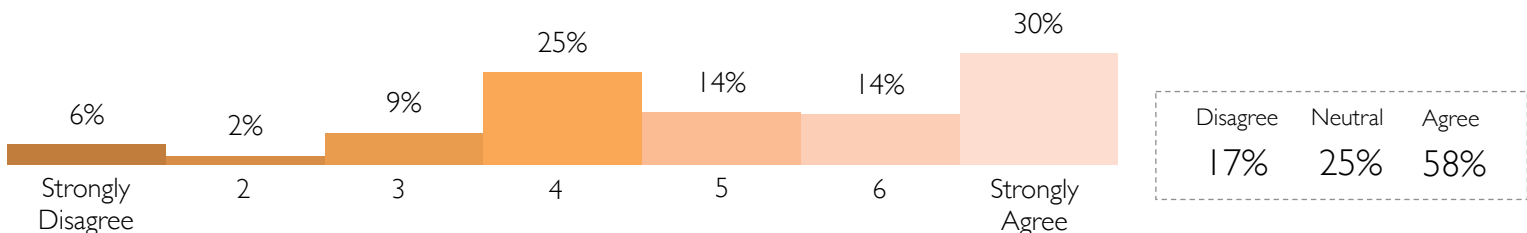
I WOULD ENCOURAGE OTHERS TO PARTICIPATE IN RECREATIONAL ACTIVITIES NEAR FRACKING OPERATIONS.



I AM CONCERNED THAT A FRACKING OPERATION WILL LIMIT ACCESS TO MY PARK IN THE FUTURE.



I SUPPORT LEGISLATION THAT WOULD PROHIBIT FRACKING OPERATIONS NEAR MY PREFERRED PUBLIC PARK.





Based on the results of this study, it is clear that some park users in Appalachia are concerned for the future of their public green spaces.

The results of this study provide some perspective on how the addition of hydraulic fracturing operations on or near public spaces of play may impact park usage. Park users who participated in this survey expressed concern that their ability to access and enjoy their favorite local, state or provincial, or federal parks systems could become hindered if nearby land was to be leased for natural gas exploration and extraction. While it is somewhat unclear *why* park users might have this suspicion, their survey responses yield some insight. Although some park users may believe their access to a park could become limited due to increased traffic or park closures, there is some evidence to suggest park users would avoid parks near fracking operations out of personal preference: 38% disagreed with the statement “I am willing to participate in recreational activities near a fracking operation,” and 56% indicated they were “willing to travel further to visit a park that was not affected by fracking operations.”

Park usage has been tied to many healthy outcomes, including disease prevention (Sallis, Floyd, Rodríguez, & Saelens, 2012) and increased physical activity among adolescents (Floyd et al., 2011; Suau, Floyd, Spengler, Maddock, & Gobster, 2012) and older adults (Pleson, Nieuwendyk, Lee, Chaddah, Nykiforuk, & Schopfloch, 2014). These benefits extend beyond local park systems to national parks (Hoehner et al., 2010) and in urban communities (O’Reilly, Berger, Hernandez, Parent, & Séguin, 2015). As a result of these projected benefits, advocates have pushed for increasing public support to expand recreation resources (Casper, Bocarro, Kanters, & Floyd, 2011; Edwards, Jilcott, Floyd, & Moore, 2011). As Baker, Schootman, Kelly, and Barnidge (2008) noted, in order for such positive benefits to be realized, community spaces must be accessible and well attended by the public.

## Limitations

Given the exploratory nature of this study, there are a number of limitations to acknowledge and consider for future research. First, park users participated in the study via online survey; as a result, the sample is limited to individuals with internet access. Similarly, the convenience sampling method used for this study limits our ability to generalize the data across an entire population of park users in Appalachian states. Second, of the 255 participants in the study, 10% of respondents were not familiar with the term *hydraulic fracturing*, and therefore, their attitudes may be informed by limited information and/or instinct. Third, we did not utilize in-depth probing techniques to identify why survey takers responded to certain questions in the manner they did. Finally, because we were interested in learning about park users’ attitudes toward fracking in public parkland, we encourage individuals to exercise caution when making inferences about the *actual* role park-proximate fracking activities plays on park usage—additional analyses of park attendance figures are necessary.

These limitations should be considered as researchers continue to evaluate the impact of hydraulic fracturing and public land leases on leisure, recreation, parks, and the environment.

## Notes

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