Oklahomans' Perspectives on Water Issues

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Background

o 2008 - OK Cooperative Extension Service facilitated statewide survey of Oklahomans' awareness, attitudes & willingness to act on water issues
  o Part of national effort
  o **52-item survey** sent to random sample of 512 Oklahoma residents
  o 264 completed surveys were returned (**52% response rate**)

o 2018 - Survey re-issued by OK Water Resources Center
  o **53-item survey** sent to random sample of 2,000 Oklahoma residents
  o 397 surveys were sent back from postal service as return to sender
  o 400 surveys were returned (**25% effective response rate**)

Demographics

Demographics		2008 % (n) (n = 264)	2018 % (n) (n = 400)	2017 Census %
Gender	Male	61.5 (184)	46.0 (184)	50.9
	Female	35.5 (170)	42.5 (170)	49.1
	No response		11.5 (46)	
Years lived in Oklahoma	All my life	47.5 (126)	40.5 (162)	
	More than 10 years	37.7 (100)	44.3 (177)	
	5 to 9 years	7.5 (20)	3.0 (12)	
	Less than 5 years	3.8 (10)	1.5 (6)	
	No response	3.5 (8)	10.7 (43)	
Residence Location	Inside city limits	75.1 (199)	63.2 (253)	
	Outside city limits, not farming	14.0 (37)	25.0 (100)	
	Outside city limits, farming	7.5 (20)	10.3 (41)	
	No response	3.4 (8)	1.6 (6)	

		2008 % (n)	2018 % (n)	2017 Census %
Size of residence community	> 100,000	29.4 (78)	31.3 (125)	
	25,000 to 100,000	26.8 (71)	20.3 (81)	
	7,000 to 25,000	15.1 (40)	14.5 (58)	
	3,500 to 7,000	7.2 (19)	9.5 (38)	
	< 3,500	12.5 (33)	17.0 (68)	
	No response	8.0 (23)	7.4 (30)	
Education	Less than or some high school	5.3 (14)	3.8 (15)	
	High school graduate	16.6 (44)	19.0 (76)	87.3
	Some college	33.6 (89)	34.8 (139)	
	College graduate	23.8 (63)	24.0 (96)	24.5
	Advanced college degree	15.8 (42)	16.8 (67)	
	No response	4.9 (12)	1.8 (7)	
Age	18 to 34	6.0 (16)	5.0 (20)	20.3
	35 to 49	19.7 (52)	15.0 (60)	21.7
	50 to 64	35.5 (94)	29.5 (118)	15.7
	65 years or older	34.3 (91)	38.8 (155)	13.2
	No response	4.5 (11)	11.7 (47)	

Findings

Top Water Issues in Oklahoma
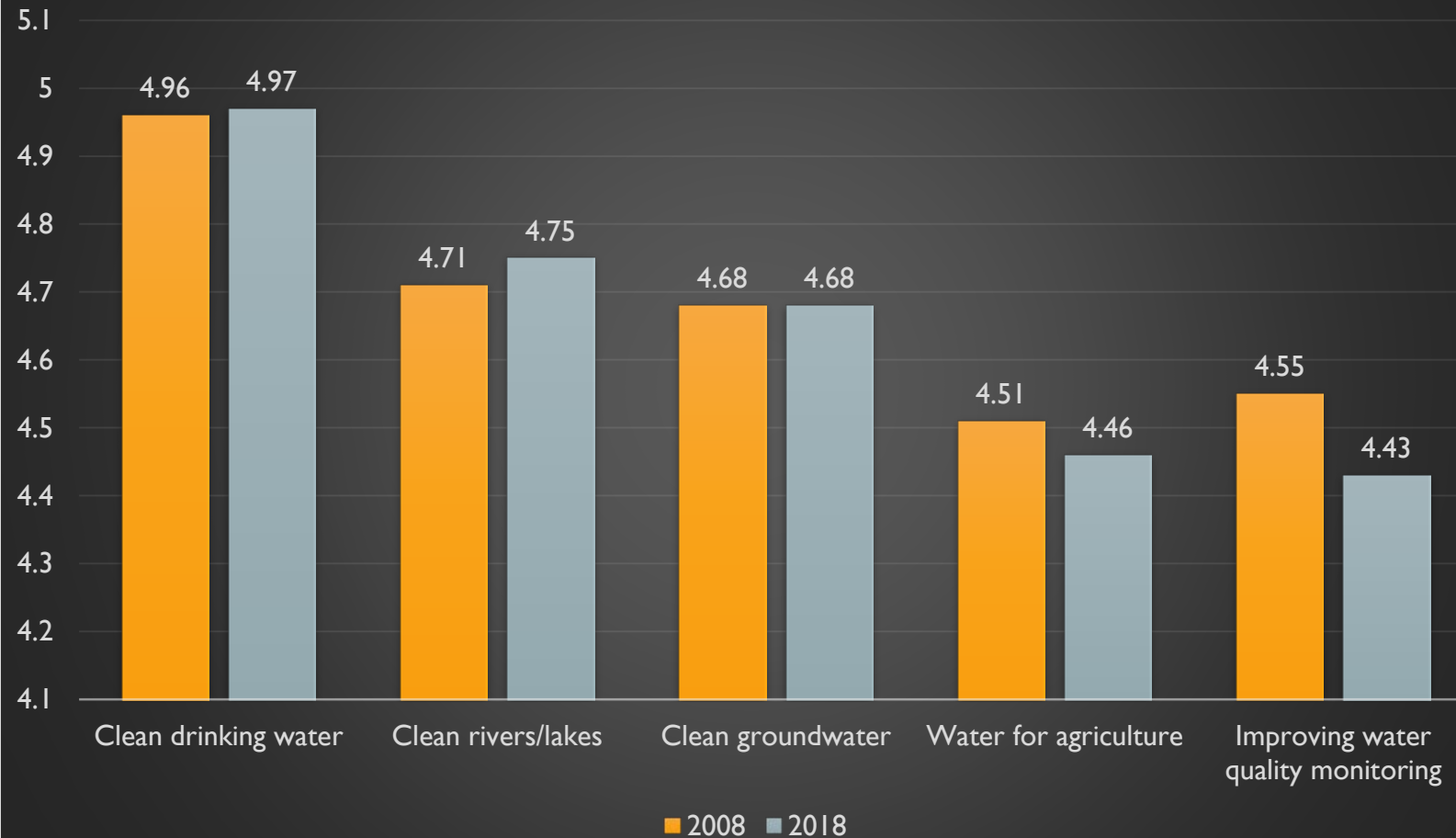
Issue	2008	2018
Clean drinking water	4.96	4.97
Clean rivers/lakes	4.71	4.75
Clean groundwater	4.68	4.68
Water for agriculture	4.51	4.46
Improving water quality monitoring	4.55	4.43

■ 2008 ■ 2018
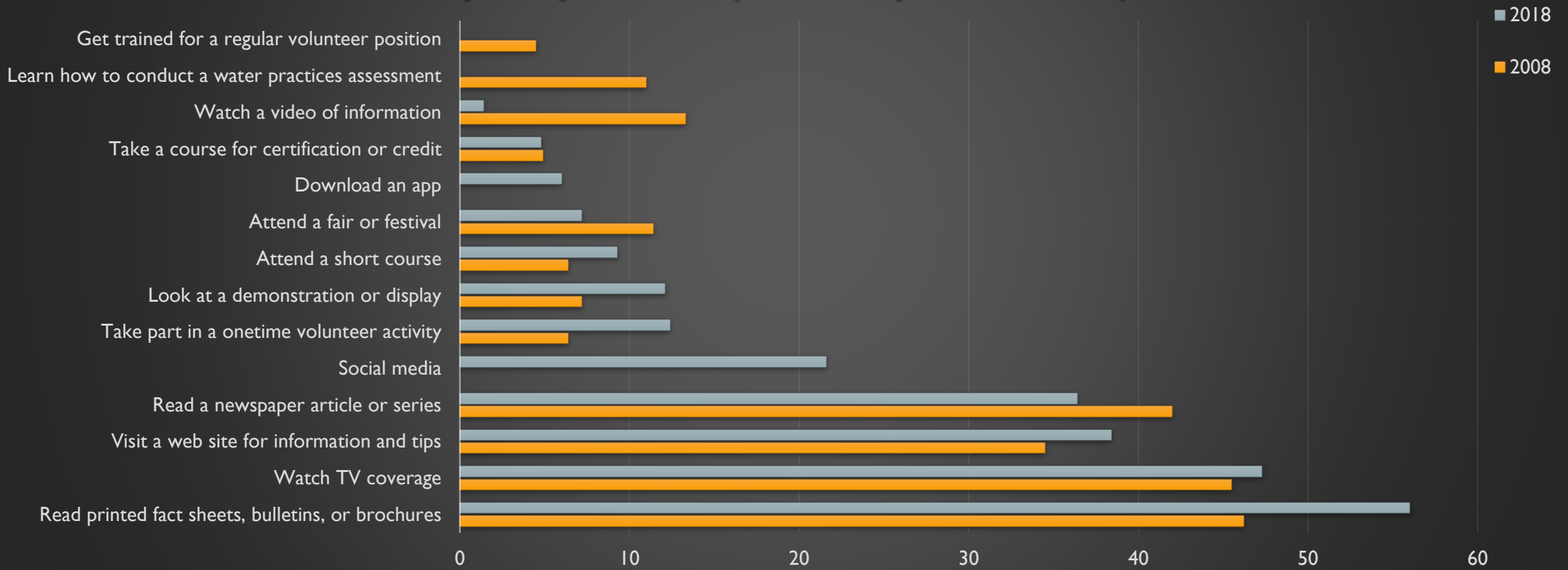
Preferred learning methods

o Preferred learning methods about water issues (following Adams et al., 2013):

- **Action**: Attend a short course or workshop, take part in a onetime volunteer activity, take a course for certification or credit, get trained for a regular volunteer position, download an app
- **Active**: Read printed materials, visit a website, watch a video of information, and attend a fair or festive
- **Passive**: Look at a demonstration or display, read a newspaper article or series, watch TV coverage

o Logistic Regression Approach

- **Binary dependent variable**: '1' if the respondent preferred the specific learning method category, '0' otherwise

o Model

- **Preferred learning method**= f (characteristics of home drinking water system, satisfaction, demographics)

Results for Regression Analysis

	Action	Active	Passive
	Coef. (Std. Err.)	Coef. (Std. Err.)	Coef. (Std. Err.)
PUBLIC	**-0.572** (0.28)	**0.817** (0.37)	0.155 (0.28)
FILTER	0.268 (0.27)	**0.718*** (0.41)	-0.016 (0.27)
SATISFIED	**-0.589** (0.27)	-0.180 (0.38)	**0.627** (0.27)
FEMALE	0.106 (0.26)	0.003 (0.36)	**0.642** (0.26)
EDUCATION	**0.225*** (0.13)	**0.374** (0.18)	-0.128 (0.13)
AGE	-0.009 (0.01)	-0.022 (0.01)	**0.042** (0.01)
CITY	-0.083 (0.28)	0.112 (0.37)	**0.478*** (0.277)

Number of observations= 314; * and ** denotes significant at the 10% and 5% levels, respectively
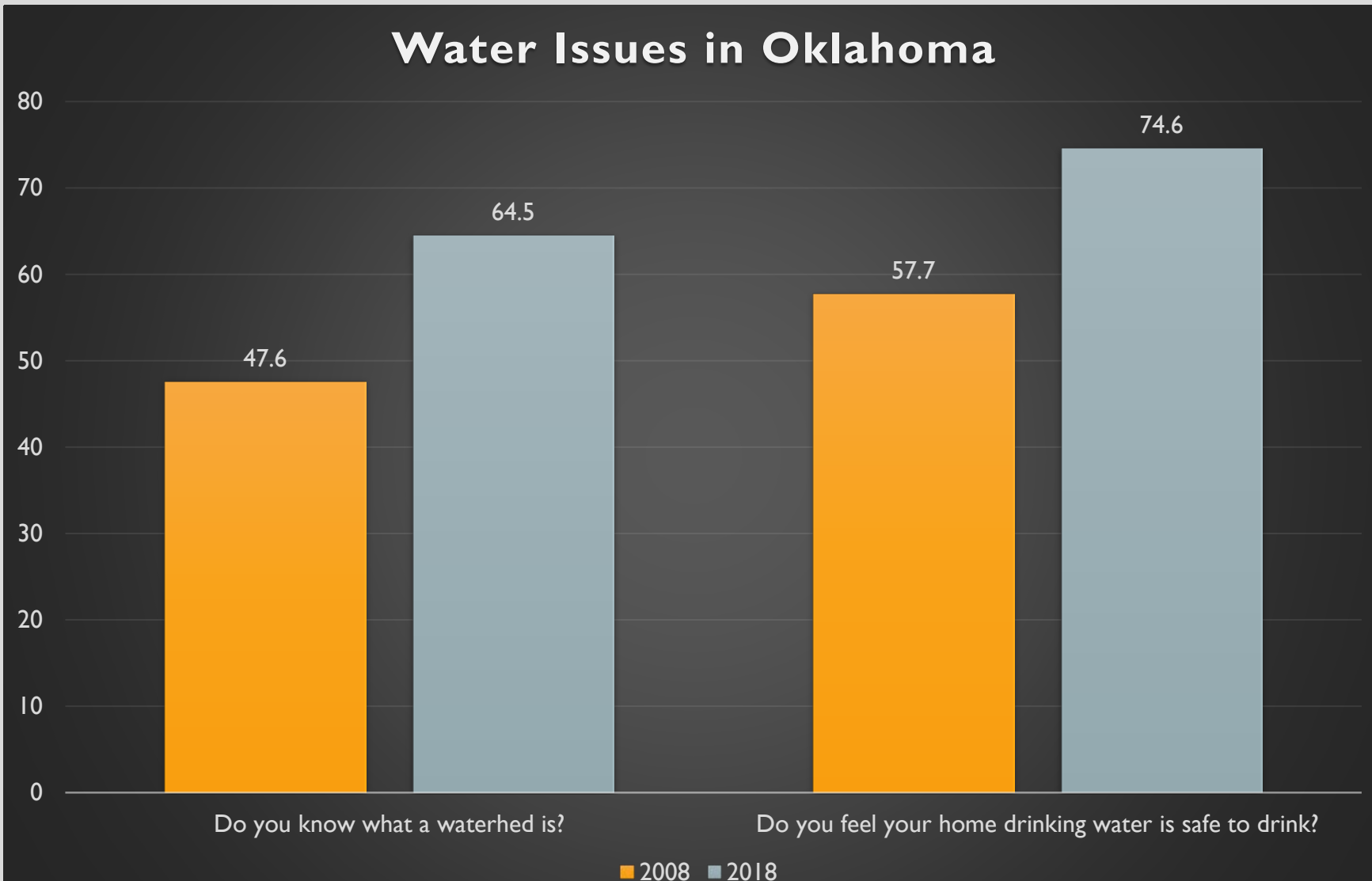
- o Residents with public water supply
  - o Less likely to prefer Action Methods
  - o Most likely to prefer Active Methods
- o Residents with water filter at home
  - o Prefer Active Methods
- o Residents satisfied with drinking water
  - o Less likely to prefer Action Methods
  - o Predominantly Prefer Passive Methods
- o Female Residents
  - o Predominantly Prefer Passive Methods
- o Educated Residents
  - o Likely to choose Action & Active methods
- o As Resident Age Increased
  - o Preference for Passive Methods Increased
- o City Dwellers
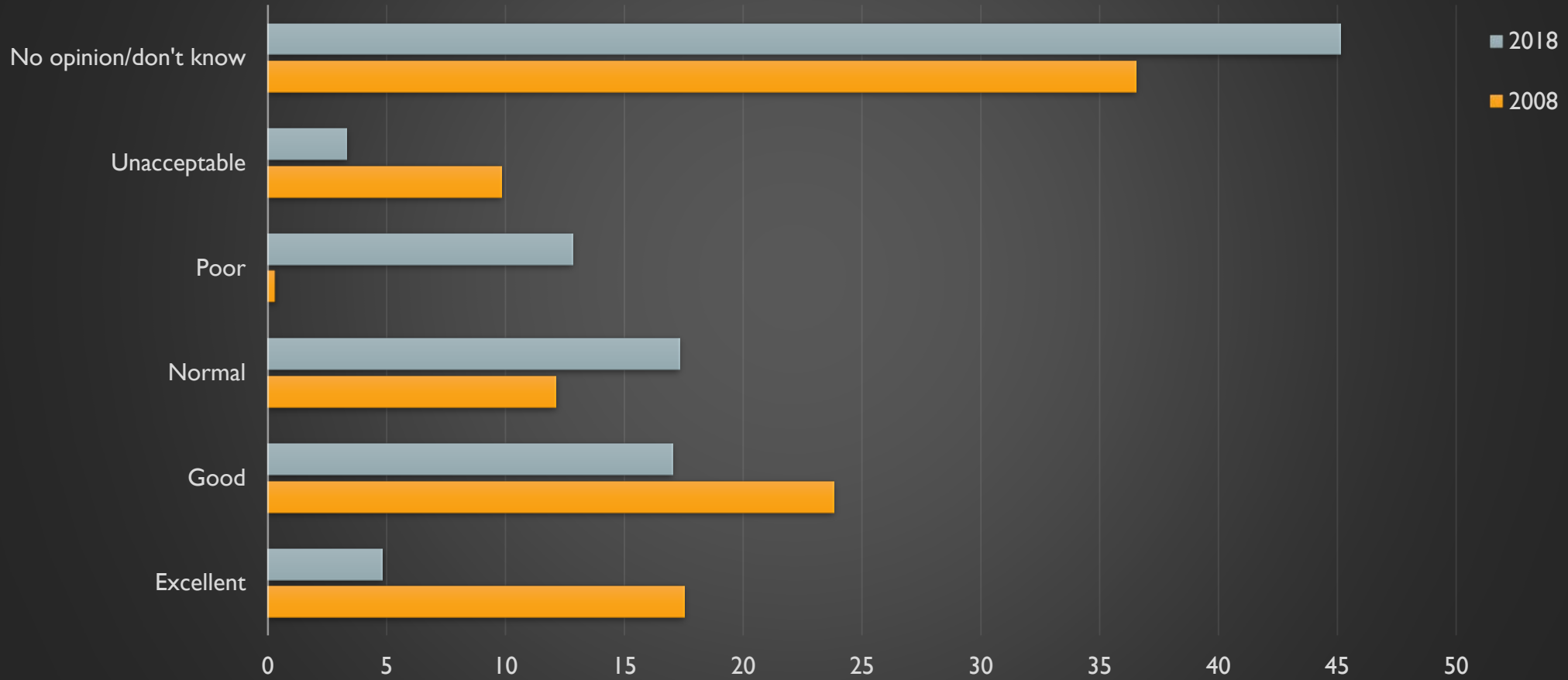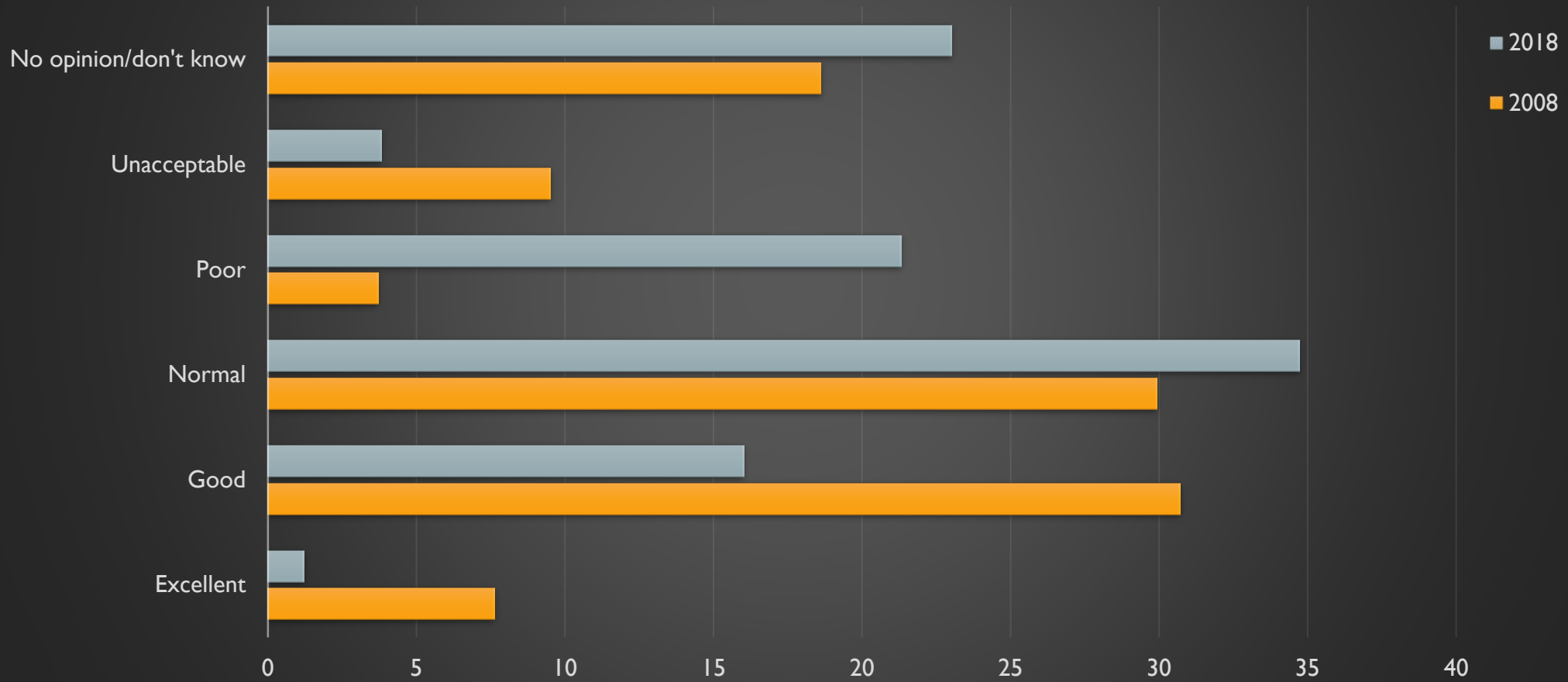 - o Likely to choose Passive Methods

Findings

In your opinion what is the quality of groundwater in your area?
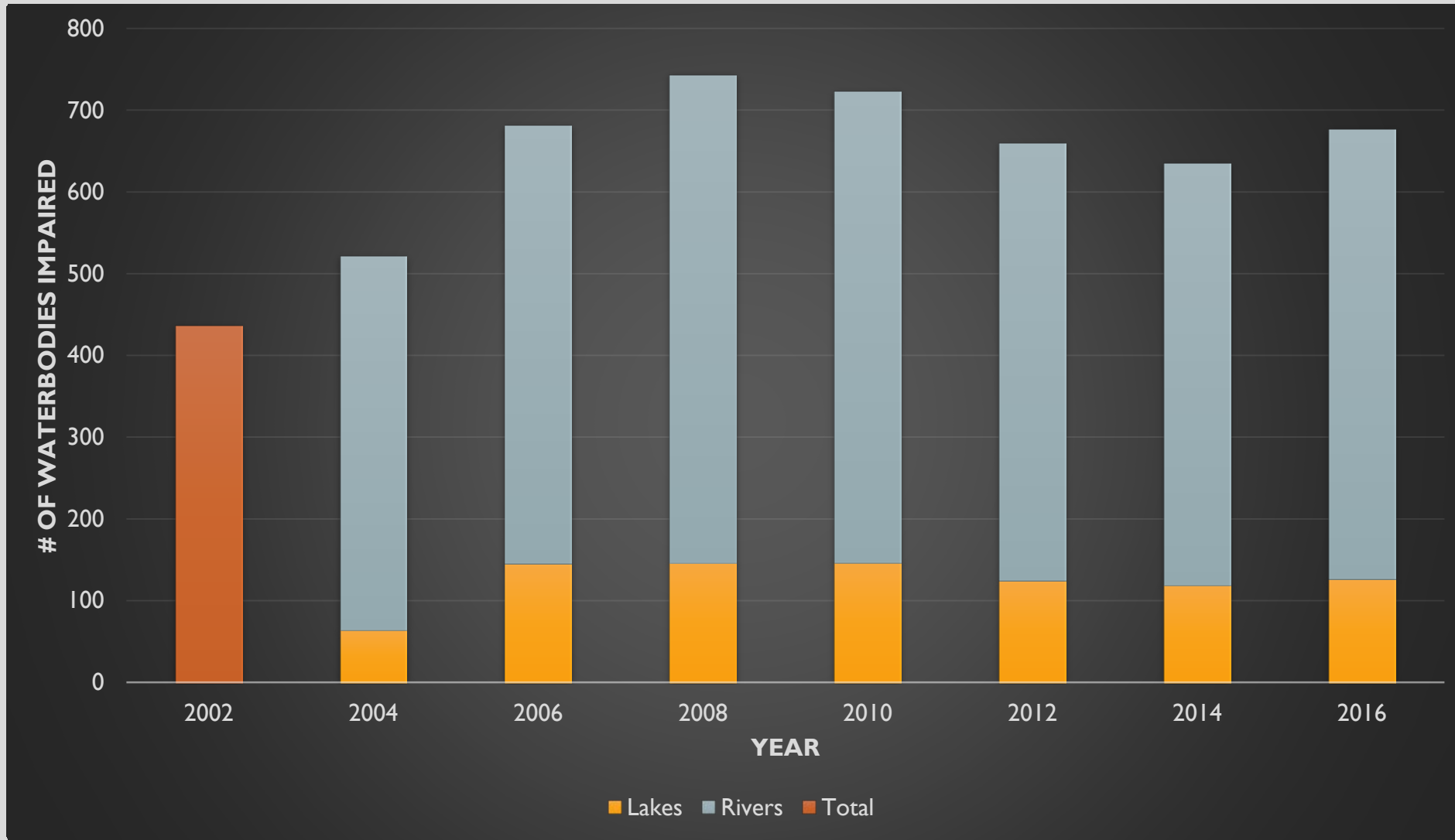
Findings

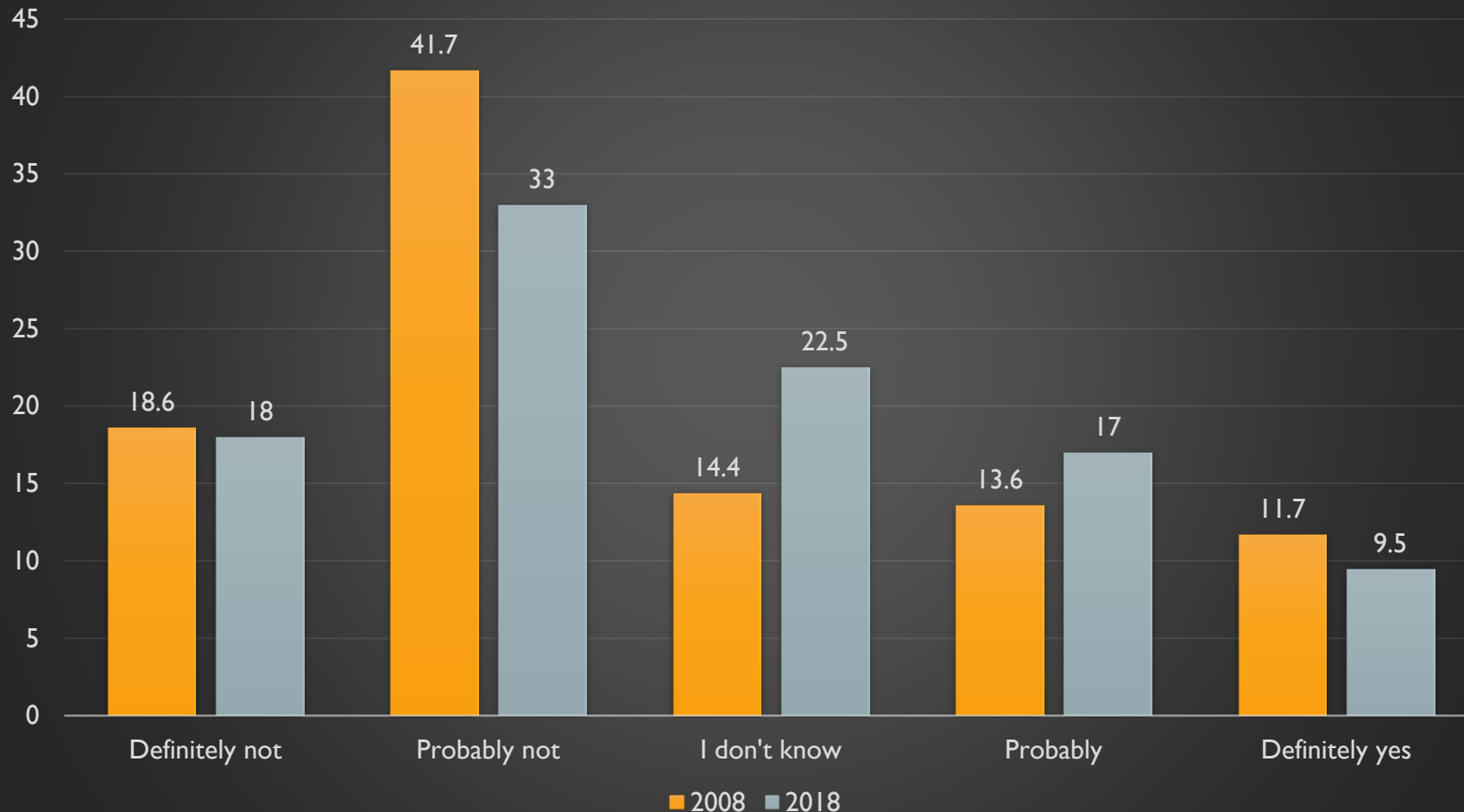In your opinion what is the quality of surface waters where you live?

Findings

Do you regard water quantity as a problem in the area where you live?

Response	2008	2018
Definitely not	18.6	18
Probably not	41.7	33
I don't know	14.4	22.5
Probably	13.6	17
Definitely yes	11.7	9.5

Rainfall – 2008 vs 2018

Rainfall in OKC & Stillwater in 2008 & 2018
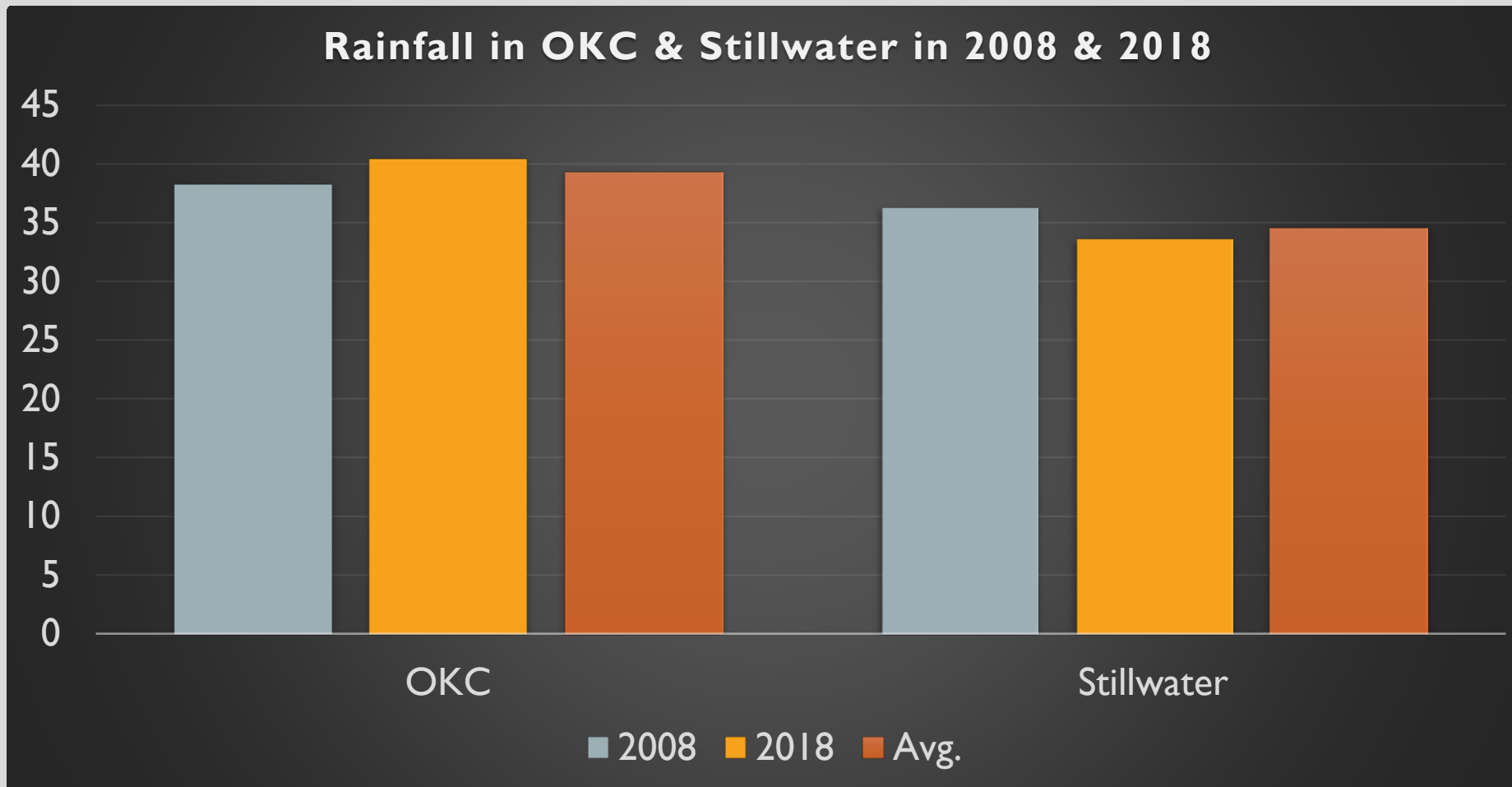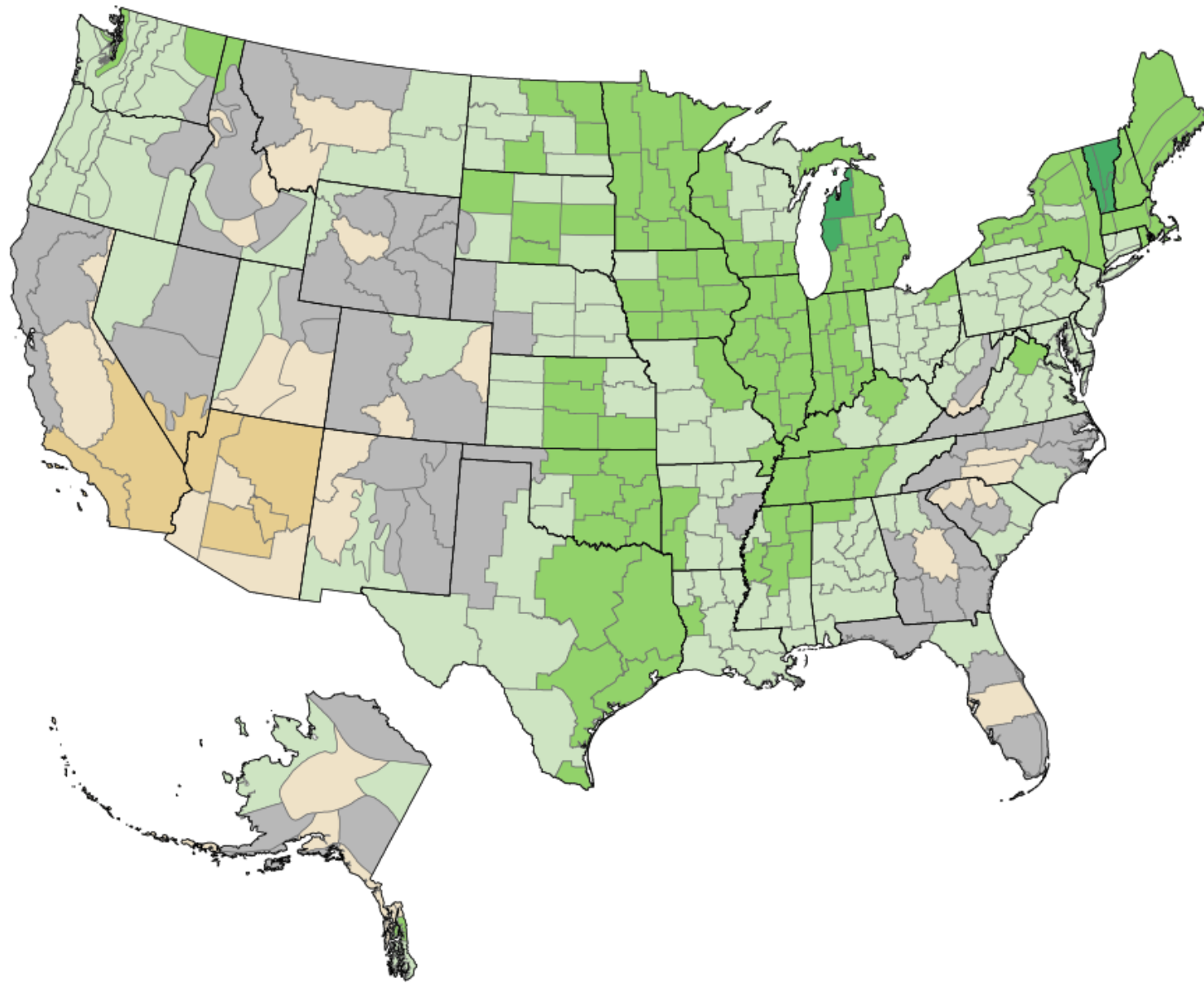
Percent change in precipitation:

-30 -20 -10 -2 2 10 20 30

Findings

Treatment and reuse of **produced water** is being tested as a possible source of water for industry, agriculture and other uses. If treatment methods are successful, this could reduce disposal of produced water and potentially help drought-proof some regions.

Would you (check all that apply):

Question	Value
Use this water for the purpose of drinking?	~10
Consume food produced with this water?	~18
Support dishcaharge to streams and rivers to improve steam flows?	~26
Support use for agricultural production not directly used for human consumption?	~58
Support use for industrial purposes?	~71

Conclusions

<u>Good News:</u>

o Clean water is top water issue in Oklahoma.

o Increase in understanding of what a watershed is.

o Increase in confidence of drinking water safety.

o Water quantity to NOT considered an issue (but more unsure or think it is)

o Supportive of reusing produced water for industrial purposes and non-food ag production

<u>Bad News:</u>

o Many/most do not know status of surface or groundwater quality (more education needed)

o Felt ground and surface water to be of slightly lower quality in 2018.

o Most unsure of impacts of climate change impacts.

Recommendations

- Printed fact sheets, bulletins, or brochures were the preferred method of content delivery (50+)

- Preferred learning methods (Action, Active & Passive) varied by demographic, water source, satisfaction with water supply

- Need to know your audience!!
  - Allow you to:
    - Better develop educational materials.
    - Provide relevant programming.
    - Ultimately creating a greater learning experience.

We need you!

o Further research is being conducted to identify opinions of water professionals and stakeholders in the water industry

Please take a few minutes to complete a water survey