

# Coastal Carolina Riverwatch

## Pure Farms and Pure Water CAFO Survey

Coastal Carolina Riverwatch, with funding from the Waterkeeper Alliance, contracted with ECU's Center for Survey Research to conduct this survey.

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*The Center for Survey Research at East Carolina University®, housed in the Thomas Harriot College of Arts and Sciences, offers services ranging from web-based and telephone surveys to data analysis, focus groups and grant-application assistance, serving university scholars and students as well as public agencies and private clients. Individual surveys may be funded by outside clients, and results do not imply endorsement by East Carolina University.*

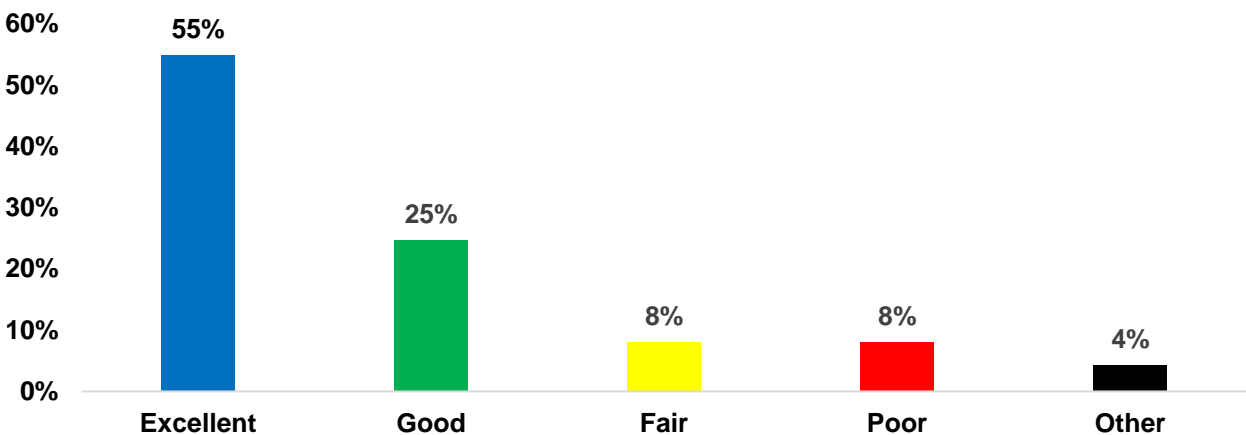
This report explores public opinion of air and water quality issues for Onslow County (North Carolina) residents who live within five miles of an industrial animal farm (that houses at least 2,500 hogs and at least 125,000 chickens), or what some refer to as concentrated animal feeding operations (CAFOs).

Over 5,000 residents were contacted via postcard and invited to participate in a survey on air and water quality. In total, 162 individuals provided completed responses by scanning the QR code (or typing the web address listed) on the postcard. This report provides a summary of the survey's major findings. It also includes a selection of open-ended responses that highlight the experiences of several respondents. For more information on the survey methodology, see the Appendix.

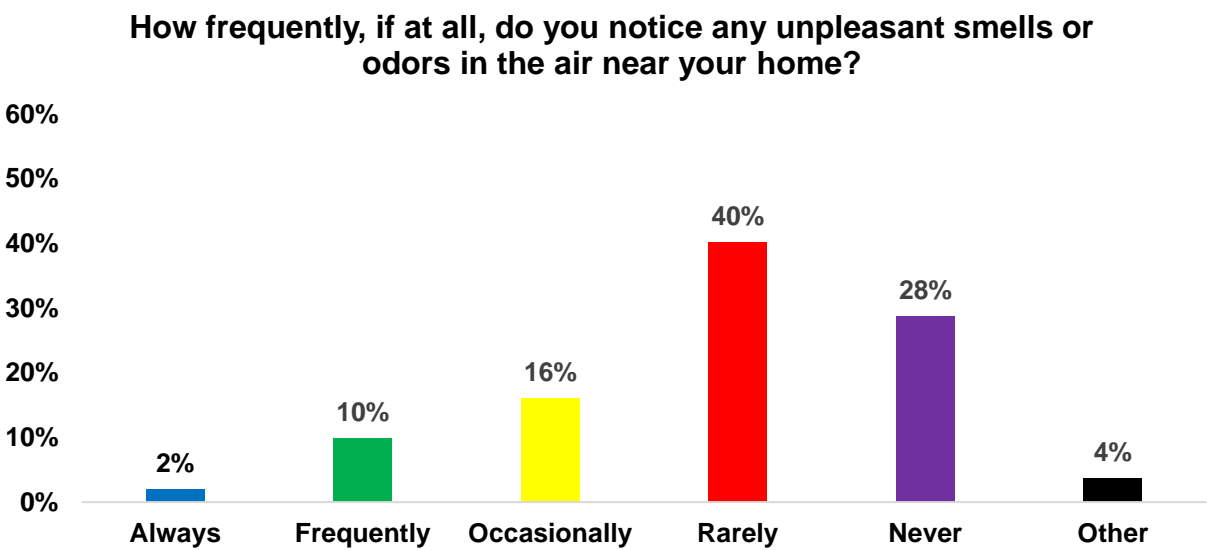
## Key Findings

- **Most respondents are positive in their evaluations of the air quality where they live.**
  - Specifically, a majority of respondents (55 percent) rated that the quality of the air in the area where they live current as "excellent." An additional 25 percent answered that the air quality is "good."
  - A combined 16 percent reported the air quality where they live as "fair" (8 percent) or "poor" (8 percent).

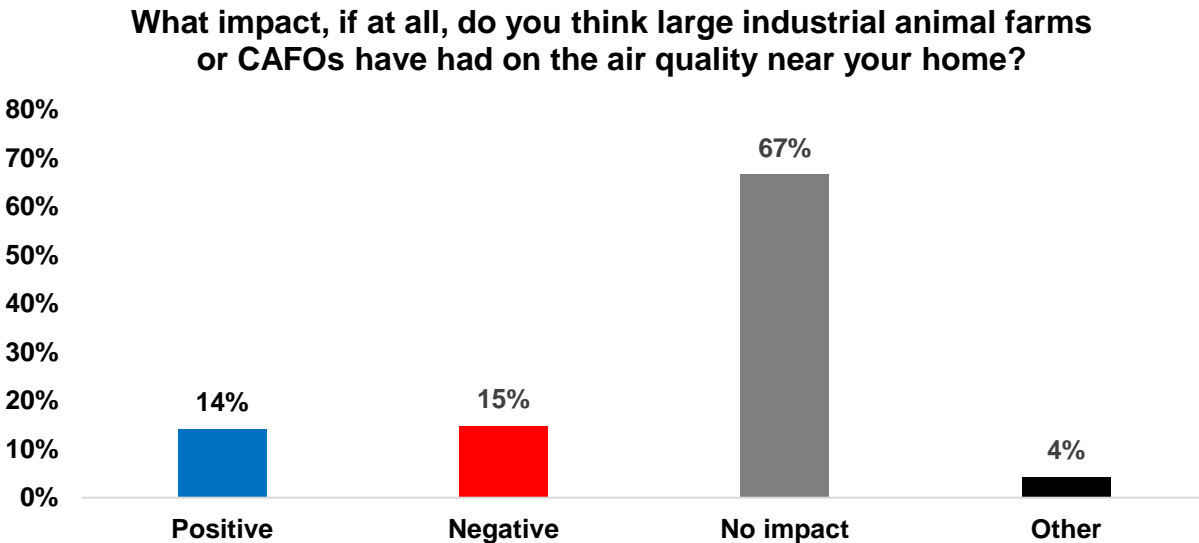
### How would you rate the quality of the air in the area where you live currently? Would you say it is excellent, good, fair, or poor?



- Some respondents offered additional thoughts that indicate air quality can vary. Three examples include:
  - “It depends. One day the entire town can reek of manure and the next day it seem[s] ok[ay].”
  - “With the trees around there isn't any smell. The only time there is is if you drive by one. ...”.
  - “Some days the odor is horrible. It varies depending on what they are doing...”.
- **Most respondents report rarely or never noticing unpleasant smells or odors in the air near their home.**
  - Specifically, a plurality of respondents, 40 percent, reported “rarely” noticing unpleasant smells or odors in the area in which they live, while another 28 percent answered “never.”
  - A combined 12 percent said that they “always” (2 percent) or “frequently” (10 percent) notice unpleasant smells or odors in the area in which they live.
    - Those in lower household income ranges were the most likely to answer that they “always” or “frequently” notice unpleasant smells or odors in the area in which they live. One-third (33 percent) fell into the “always” or “frequently” category among those in households with annual incomes of \$50,000 or less; 21 percent for \$50,000 to \$99,999; an 0% for \$100,000 or higher.

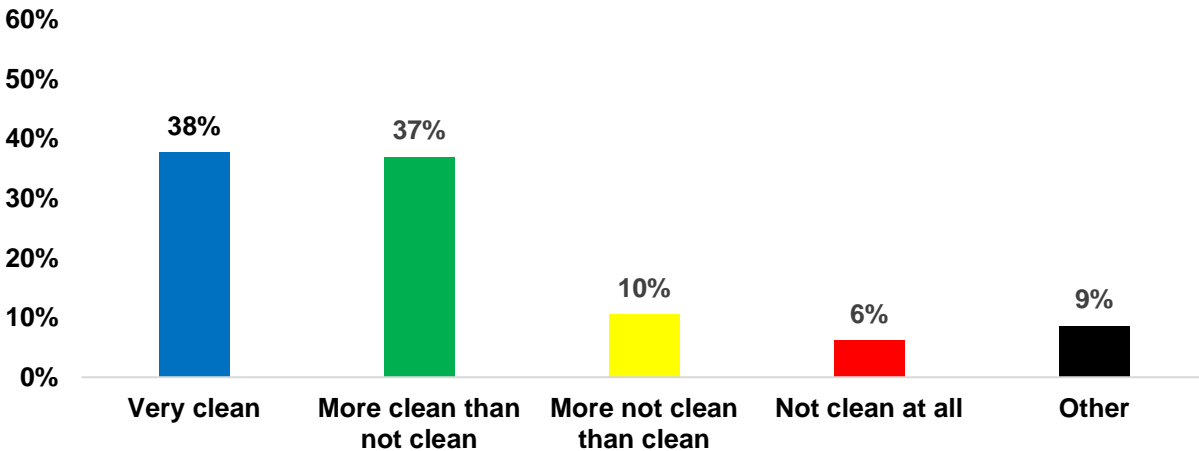


- **Approximately two-thirds of respondents (67 percent) believe that large industrial animal farms have had no impact on the air quality near their home.**
  - Among those who answered that large industrial animal farm have had a “positive” or “negative” impact, responses were almost evenly divided (with 15 percent that answered “negative” and 14 percent that answered “positive”).



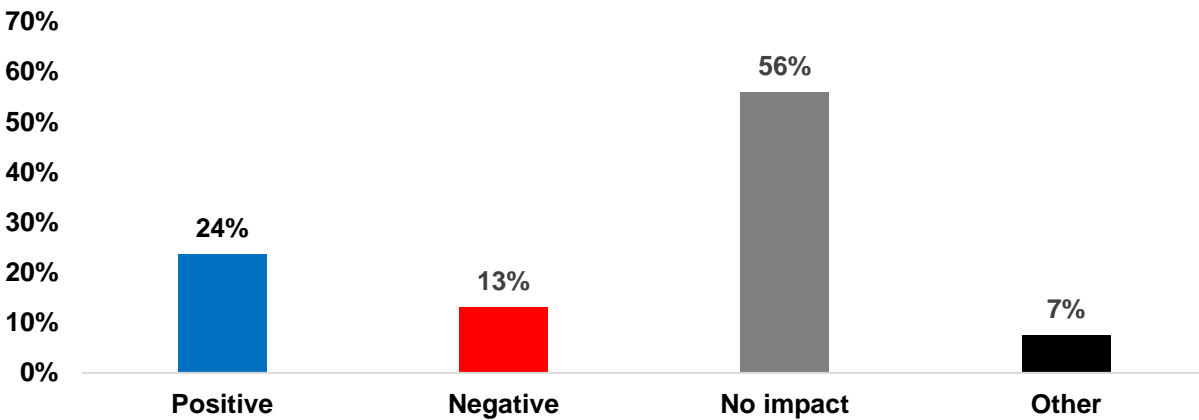
- A few respondents offered additional nuance. Two examples include:
  - “[A]t times it is a negative impact [and] at times it doesn’t seem to impact air quality.”
  - “[W]e spend more time indoors when the wind comes from the chicken farm directions.”
- **A majority of respondents rates the cleanliness of the water in the rivers and streams near where they live as clean or very clean.**
  - Specifically, a combined 75 percent answered “very clean” (38 percent) or “more clean than not clean” (37 percent). By comparison, a combined 16 percent evaluated the cleanliness as the water in the rivers and streams near where they live as “more not clean than clean” (10 percent) or “not clean at all” (6 percent).

### How would you rate the cleanliness of the water in the rivers and streams near where you live?



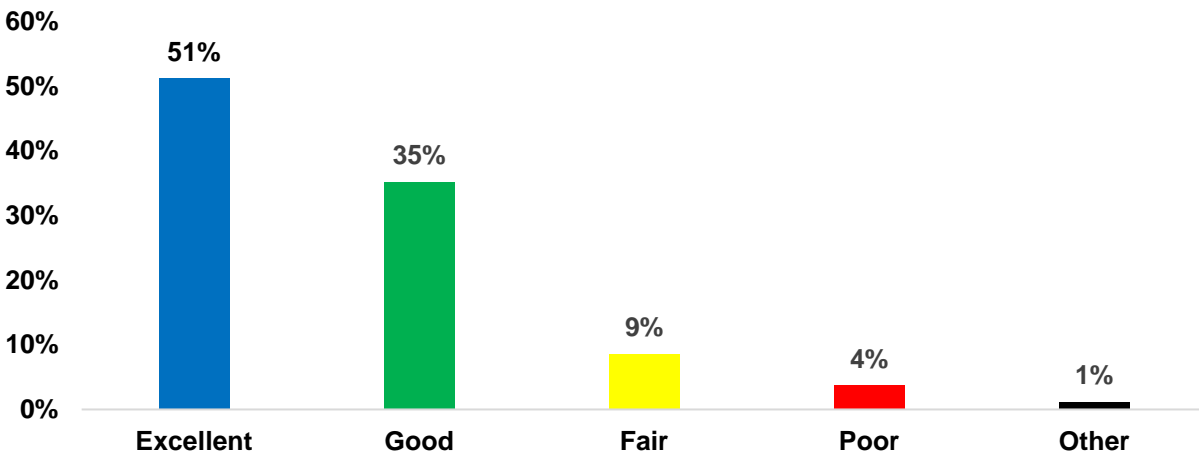
- Of the 9 percent who answered “other,” respondents shared some additional comments. Three examples include:
  - “Very clean to the point that growing up we swam and played in the creeks and ponds [sic].”
  - “Much [c]leaner than the water in rivers and streams near new housing developments and urbanized areas. The water released from ‘urban water treatment’ facilities has me very concerned for water quality in those areas compared to where we live.”
  - “How could you even tell the water quality?”
- **Most of respondents (56 percent) believe that large industrial animal farms have had no impact on the cleanliness of the water in the rivers and streams near where they live.**
  - Of the remaining respondents, more answered that there has been a “positive impact” (24 percent) than a “negative impact” (13 percent).

**What impact, if at all, do you think large industrial animal farms or CAFOs have had on the cleanliness of the water in the rivers and streams near where you live?**



- **Most respondents have a positive evaluation when rating the quality of their drinking water where they currently live.**
  - Specifically, a majority of respondents (51 percent) rate the quality of their drinking water as “excellent.” An additional 35 percent rate the quality of their drinking water as “good.”
    - Among those who get their drinking water from a private well, two-thirds (67%) rated their drinking water as “excellent” compared to 39 percent who do not get their drinking water from a private well.
  - A combined 13 percent rated their drinking water as “fair” (9 percent) or “poor” (4 percent).

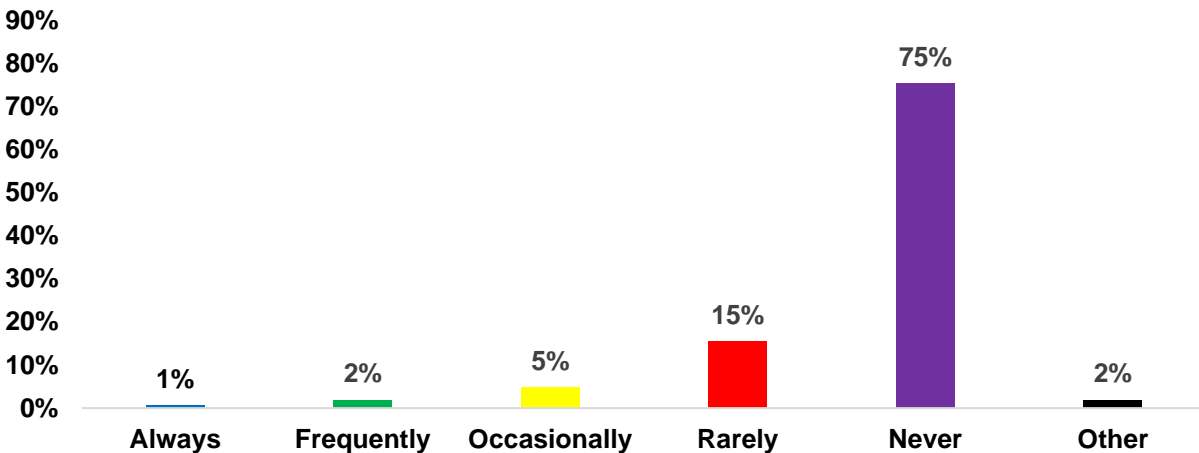
**How would you rate the quality of the drinking water where you live currently?**



- **Few respondents report any unpleasant smells from the water that comes from their home.**

- Just 3 percent of respondents combined reported “always” (1 percent) or “frequently” (2 percent) noticing an unpleasant smell from the water that comes from their home.
- A combined 90 percent answered “rarely” (15 percent) or “never” (75 percent) having an unpleasant smell coming from the water that comes from their home.

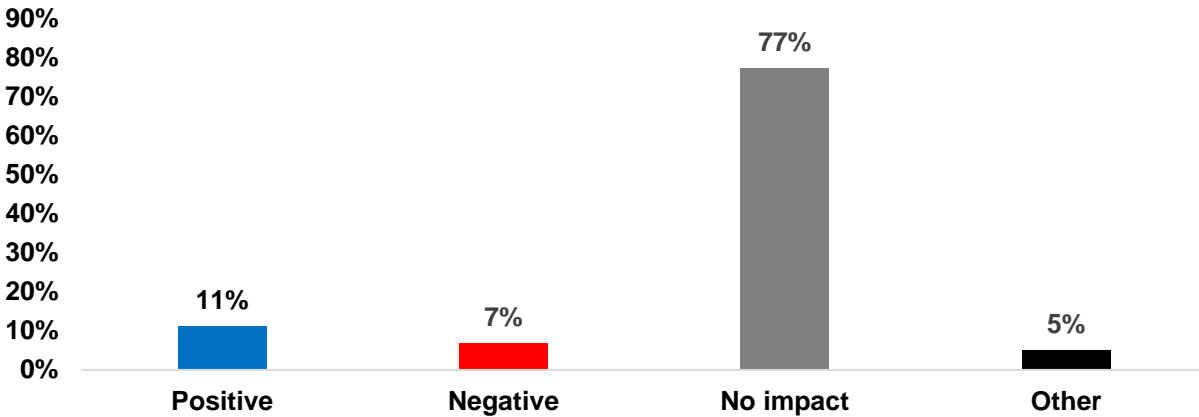
**How frequently, if at all, does the water coming from your home have an unpleasant smell to it?**



- **Finally, most respondents do not think that large industrial farms have had an impact (positive or negative) on the water quality coming from their home.**

- Approximately 77 percent answered “no impact” on whether large industrial animal farms have affected the water quality coming from their home.
- Of the remaining responses, 11 percent answered “positive,” 7 percent answered “negative,” and 5 percent answered “other.”

**What impact, if at all, do you think large industrial animal farms or CAFOs have had on the water quality coming from your home?**



**Appendix**

**Information About the Survey**

Coastal Carolina Riverwatch contracted with East Carolina University's (ECU) Center for Survey Research (CSR) to conduct a survey of adults (i.e., 18 years of age or older) in Onslow County, North Carolina who live within five miles of an industrial animal farm (that house at least 2,500 hogs and at least 125,000 chickens), or what some refer to as concentrated animal feeding operations (CAFOs). Potential respondents were contacted once by mail through a postcard that requested voluntary participation in the survey. In total, there were 5,952 postcards mailed. The survey opened on July 24, 2023, and closed on September 1, 2023. During that period, 162 people completed the survey for a response rate of 3 percent. Respondents completed the survey online either through a QR code or a web address provided on the postcard.



## Topline Results

**How would you rate the quality of the air in the area where you live currently?  
Would you say it is excellent, good, fair, or poor?**

	Frequency	Percent
Excellent air quality	89	54.9
Good air quality	40	24.7
Fair air quality	13	8.0
Poor air quality	13	8.0
Other	7	4.3
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"): How would you rate the quality of the air in the area where you live currently?  
Would you say it is excellent, good, fair, or poor?**

Depends on the day, wind and what stage the farmers animals are in

It depends. One day the entire town can reek of manure and the next day it seem ok.

Only noticeable in winter when winds come from Northerly direction.

periodic smell, but no adverse quality. If you have lived on a farm or worked on one, as my case the smell brings back good memories.

poor when chickens are being moved or the houses are being cleaned - 20+ houses 1mile

Some days the odor is horrible. It varies depending on what they are doing, sometimes besides the bad odor we get thousands of flies, more when they clean the areas after they ship

With the trees around there isn't any smell. The only time there is is if you drive by one and growing up with that my dad would say "That's were your food comes from" witch to me is good to know that's were my food comes from. The only other smell would be the farmers in my area use the manure from the animals to fertilizer fields which was also a interesting thing to learn as being younger.

**How frequently, if at all, do you notice any unpleasant smells or odors in the air near your home?**

	Frequency	Percent
Always notice unpleasant smells or odors in the air near my home	3	1.9
Frequently notice unpleasant smells or odors in the air near my home	16	9.9
Occasionally notice unpleasant smells or odors in the air near my home	26	16.0
Rarely notice unpleasant smells or odors in the air near my home	65	40.1
Never notice unpleasant smells or odors in the air near my home	46	28.4
Other	6	3.7
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered “Other”): How frequently, if at all, do you notice any unpleasant smells or odors in the air near your home?**

Along with thee odors we get flys
Don't assume there unpleasant. Depends on how you are raised, I think the smell of asphalt factories and chemical plants are well worse.
I rarely notice unseemly odors yet I live within 1/2 mile of a confinement operation. However, we do live in an agricultural community and odors in the country have always been present.
smell the local city wastewater treatment plant from time to time but not hogs or chickens
The farms near me do a great job mitigating any odors by planting tree buffers around their farms.
When winds come from North

**What impact, if at all, do you think large industrial animal farms or CAFOs have had on the air quality near your home: an overall positive impact, an overall negative impact, or no impact at all?**

	Frequency	Percent
Overall positive impact on air quality	23	14.2
Overall negative impact on air quality	24	14.8
No impact at all on air quality	108	66.7
Other	7	4.3
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"): What impact, if at all, do you think large industrial animal farms or CAFOs have had on the air quality near your home: an overall positive impact, an overall negative impact, or no impact at all?**

at times it is a negative impact, at times it doesn't seem to impact the air quality
I purposely bought my home in rural eastern NC, where I was born and raised, because I love it here.
I really don't know how much. There are no respiratory conditions in this household that would be more sensitive to such impacts
no more than a sueige treatment plant, actually less.
occasional odors when fertilizing fields,
Very little impact on air qualiy
we spend more time indoors when the wind comes from the chicken farm directions

**How would you rate the cleanliness of the water in the rivers and streams near where you live? Would you say that the cleanliness of the water in the rivers and streams near where you live is very clean, more clean than not clean, more not clean than clean, or not clean at all?**

	Frequency	Percent
Very clean	61	37.7
More clean than not clean	60	37.0
More not clean than clean	17	10.5
Not clean at all	10	6.2
Other	14	8.6
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"):** How would you rate the cleanliness of the water in the rivers and streams near where you live? Would you say that the cleanliness of the water in the rivers and streams near where you live is very clean, more clean than not clean, more not clean than clean, or not clean at all?

All waterways are overgrown

Don't know

Family farms have nothing to do with the cleanliness of water. They are inspected annually. Look and other large corporations and towns that pollute

How could you even tell the water quality?

How would I know

I don't have any contact with these water sources

I only know of 1 farm that has had problems

I see a lot of trash floating around. Like fast food, water bottles and occasional appliances.

large municipalities are causing water issues. not CAFO

Much Cleaner than the water in rivers and streams near new housing developments and urbanized areas. The water released from "urban water treatment" facilities has me very concerned for water quality in those areas compared to where I live.

Not aware

The rivers are polluted by municipal waste

this is an unknown to me. the one stream near my home flows away from my house.

Very clean to the point that growing up we swam and played in the creeks and pounds. And my parents have to when they were young with no health conditions because of it.

**What impact, if at all, do you think large industrial animal farms or CAFOs have had on the cleanliness of the water in the rivers and streams near where you live: an overall positive impact, an overall negative impact, or no impact at all?**

	Frequency	Percent
Overall positive impact on water cleanliness in the rivers and streams	38	23.6
Overall negative impact on water cleanliness in the rivers and streams	21	13.0
No impact at all on water cleanliness in the rivers and streams	90	55.9
Other	12	7.5
Total	161	100.0
Did not answer (skipped)	1	
Total	162	

**Open-ended, Unedited Comments (for those who answered “Other”): What impact, if at all, do you think large industrial animal farms or CAFOs have had on the cleanliness of the water in the rivers and streams near where you live: an overall positive impact, an overall negative impact, or no impact at all?**

Don't know

I don't know.

I'm not sure what impact it has had. I just know the rivers and streams are not what they used to be

In our area people regularly use the waterways for boating, fishing and swimming. Short of having an unbiased water survey done I would not have numerical or statistical evidence at my disposal

need more options, i believe it has minimal impact, that is both positive and negative
Not aware
now with EPA regs it has no contact with rivers and streams, Mute question,
Practically no impact at all
Some impact
They don't go out and clean the rivers and all. I have never seen any waste from the farms in the rivers or streams.
Unknown
Unlike Jacksonville and USMC camp Lejune, Cafos have a 0 discharge permit. All the municipalities, military bases and Jacksonville can discharge.

**Does your home draw any of its water from a private well?**

	Frequency	Percent
Yes	64	39.5
No	87	53.7
Not sure	6	3.7
Other	5	3.1
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"): Does your home draw any of its water from a private well?**

Both
I do have a well on my property for livestock. has been tested and is potable.
Municipal water source that uses well water
My home doesn't but my old work did and it's only 2 miles from my house.
We get it from a water tower in town northwest onslow water association

**Have you had your well water tested within the past twelve months?**

	Frequency	Percent
Yes	22	34.4
No	41	64.1
Other	1	1.6
Total	64	100.0
Does not draw well water	98	
Total	162	

**Open-ended, Unedited Comments (for those who answered "Other"): Have you had your well water tested within the past twelve months?**

I have great water.
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**How would you rate the quality of the drinking water where you live currently? Would you say it is excellent, good, fair, or poor?**

	Frequency	Percent
Excellent drinking water quality	83	51.2
Good drinking water quality	57	35.2
Fair drinking water quality	14	8.6
Poor drinking water quality	6	3.7
Other	2	1.2
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"): How would you rate the quality of the drinking water where you live currently? Would you say it is excellent, good, fair, or poor?**

Tastes bad has lots of minerals and such can clog the toilet jets with a black material
Water tests have shown high chlorine and dissolved solids in the tsp water. My faucets are continuously cleaned due to hard water deposits

**How frequently, if at all, does the water coming from your home have an unpleasant smell to it?**

	Frequency	Percent
Always has an unpleasant smell	1	.6
Frequently has an unpleasant smell	3	1.9
Occasionally has an unpleasant smell	8	4.9
Rarely has an unpleasant smell	25	15.4
Never has an unpleasant smell	122	75.3
Other	3	1.9
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered “Other”): How frequently, if at all, does the water coming from your home have an unpleasant smell to it?**

I do not have a well. I get my water from the town of Jacksonville
No unpleasant smell. However, there are times when running the shower produces a 'bleach' smell
Occasionally due to sulfur smell

**How frequently, if at all, does the water coming from your home have an unpleasant taste to it?**

	Frequency	Percent
Always has an unpleasant taste	8	4.9
Frequently has an unpleasant taste	3	1.9
Occasionally has an unpleasant taste	5	3.1
Rarely has an unpleasant taste	19	11.7
Never has an unpleasant taste	122	75.3
Other	5	3.1
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered “Other”): How frequently, if at all, does the water coming from your home have an unpleasant taste to it?**

I do not drink unfiltered tap water for this reason.
I don't drink unfiltered tap water
I drink bottled water.

The only "unpleasant" taste would be a little rust that shows up every now and then.

We have a filter attached to our sink water.

**What impact, if at all, do you think large industrial animal farms or CAFOs have had on the water quality coming from your home: an overall positive impact, an overall negative impact, or no impact at all?**

	Frequency	Percent
Overall positive impact on water quality	18	11.1
Overall negative impact on water quality	11	6.8
No impact at all on water quality	125	77.2
Other	8	4.9
Total	162	100.0

**Open-ended, Unedited Comments (for those who answered "Other"): What impact, if at all, do you think large industrial animal farms or CAFOs have had on the water quality coming from your home: an overall positive impact, an overall negative impact, or no impact at all?**

Again, I do not know the impact specifically from CAFO's but something is impacting the taste.

I don't know

I get my water from the town of Jacksonville

My well has a sulphur issue- unrelated to nearby facilities

Nothing impacts the water coming "from" my home! And farms do not have any negative effect on local drinking water!

On City Water

Unsure we get our water from northwest onslow water association and don't know their source

Water quality coming FROM my home or TO my home? Water tests would show that it has no effect on water TO MY HOME. Water tests of water from our taps only showed that that water was safe to drink.

**What is your age? Please select the appropriate range.**

	Frequency	Percent
18 to 29 years old	25	15.4
30 to 39 years old	31	19.1
40 to 49 years old	32	19.8
50 to 64 years old	46	28.4
65 years or older	28	17.3
Total	162	100.0

**In politics today, do you consider yourself a Republican, Democrat, independent, or something else?**

	Frequency	Percent
Republican	54	33.3
Democrat	21	13.0
Independent	70	43.2
Something else	17	10.5
Total	162	100.0

**Which category best describes you?**

	Frequency	Percent
Hispanic or Latino of any race	1	.6
White or Caucasian	138	85.7
Black or African American	12	7.5
Some other race or ethnicity, or multiple races	10	6.2
Total	161	100.0
Did not answer (skipped)	1	
Total	162	

**What is the highest level of school you have completed or the highest degree you have received?**

	Frequency	Percent
High school graduate, GED, or did not finish high school	15	9.3
Some college or a 2-year associate degree	54	33.3
4-year college or university degree	62	38.3
Postgraduate degree	31	19.1
Total	162	100.0

**Are you male or female, or do you prefer another description?**

	Frequency	Percent
Male	88	54.7
Female	71	44.1
Prefer another description	2	1.2
Total	161	100.0
Did not answer (skipped)	1	
Total	162	

**Do you own or rent your home?**

	Frequency	Percent
Own	151	93.2
Rent	10	6.2
Other	1	.6
Total	162	100.0

**Are you or someone in your household currently serving in the military?  
(Respondents can select more than one category, which is why percentages add to more than 100 percent.)**

	Frequency	Percent
Yes. I am currently serving in the military.	4	2.5
Yes. Someone in my household is currently serving in the military.	3	1.9
No, not currently. But, somebody in my household previously served in the military.	53	32.7
No. Nobody in my household is currently or has previously served in the military.	104	64.2

**Do you have any children under the age of 18 currently living in your household?**

	Frequency	Percent
Yes	69	42.6
No	93	57.4
Total	162	100.0

**Which of the following best describes your yearly household income before taxes?**

	Frequency	Percent
Less than \$50,000	18	11.1
\$50,000 to \$99,999	57	35.2
\$100,000 or more	51	31.5
Prefer not to answer	36	22.2
Total	162	100.0