Cary Institute of Ecosystem Studies

Name _____   Date _____

# Hydrofracking Data

1. Explain turbidity in your own words.

    _____

    _____

    _____

2. How does turbidity impact the aquatic ecosystem? Give at least two possible ways.

    _____

    _____

    _____

3. Create a prediction graph of how you would expect turbidity to change if more hydrofracking wells are drilled in a particular area. Explain your prediction in the space below the graph.

High

Turbidity (ntu)

Low

Few   Many

 # wells/ km²

_____

_____

_____
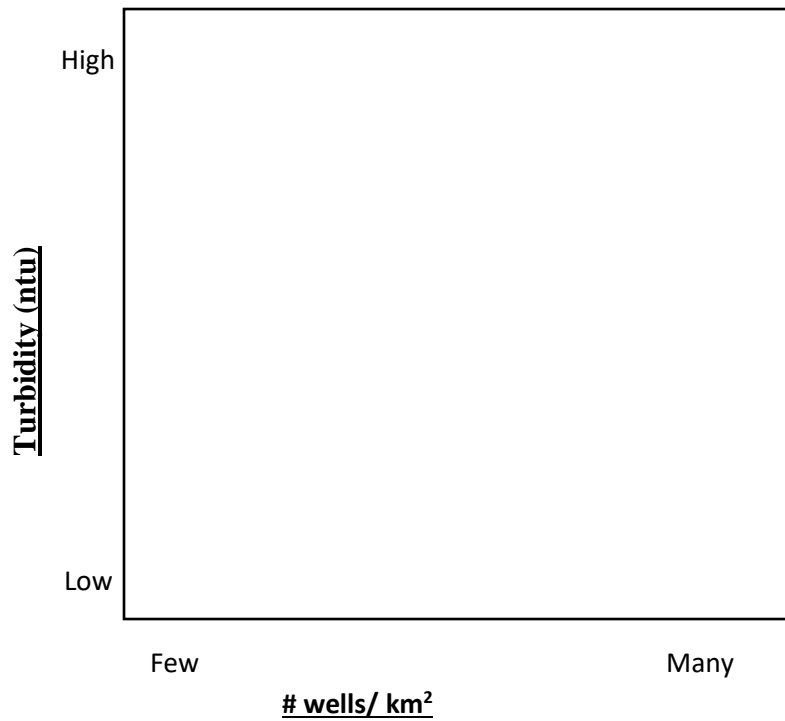
4. Now, let's find out what actually happened. Use the data to create a scatter plot that shows the relationship between stream turbidity and the number of wells in an area.   The researchers who gathered these data looked at seven streams in an area of Arkansas where the Fayetteville shale is located. Each stream had a different number of wells in its drainage area. They measured turbidity with a Hach meter in spring 2009, during high spring flow.

# wells /km^2	turbidity (ntu)
0.6	1.9
2.5	2.3
4.2	4.2
7.4	7.2
8.4	10.1
9.3	6.9
12.1	9.3

Turbidity (ntu)

# of wells/ km^2
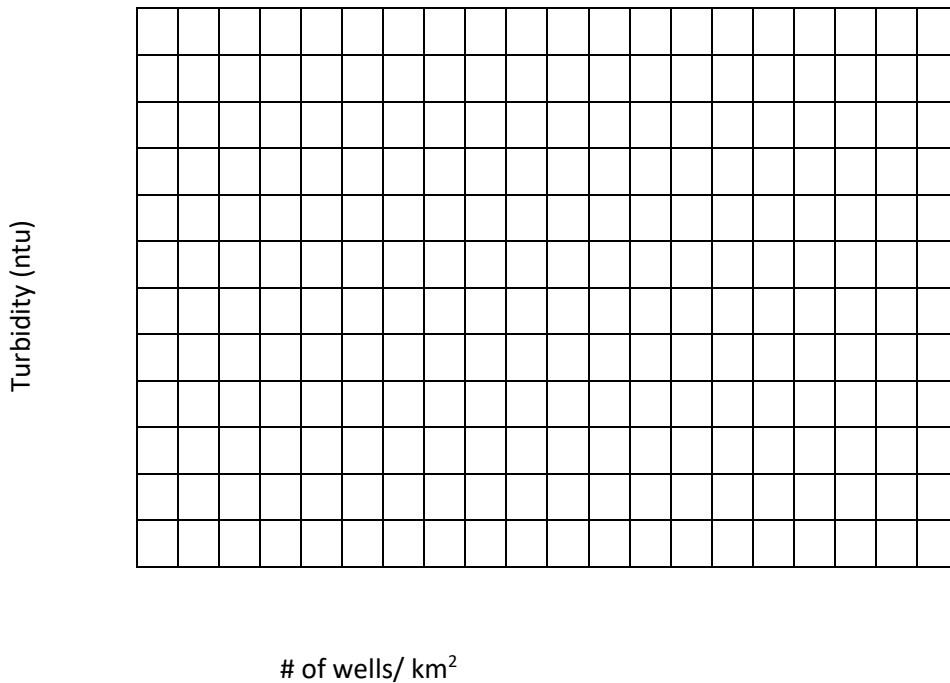
5. Describe the changes you see in the turbidity values as the number of wells increases.

6. List the potential sources of variability in the investigation.

Real – *what might be some sources of variability that are due to the ecosystem?*	*Induced (experimental)* – *variability due to human error, sampling error, tool error*

7. Based on this information, does hydrofracking have an impact on aquatic ecosystems?

   Explain your claim.

   _____

   _____

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