***Plows, plagues, and petroleum:***

***How humans took control of climate***

**By William F. Ruddiman**

**Part 1**

It is important to understand Ruddiman is trying to make an argument about early history human-caused climate change. This is a theory (model/explanation) he is advancing, and it is controversial (i.e. not a consensus among scientists).

· What overarching claim does Ruddiman say the book will explore?

· What does Ruddiman consider the four great revolutions in the history of earth science? [Notice all of these revolutions are linked to increasingly complex models/explanations of the earth, its climate and the relationship to humans].

**Part 2**

In this section, Ruddiman is giving an overview of the way the earth developed over its early history, and the patterns in the data we have from that time. As you read this section, recognize he is building up a model of how the climate of the earth works. You should be building your own preliminary model (explanation) as you go through the sections of the book. We ask you the same questions in each chapter to help you see how he is building his explanation up, and how you can use his pieces to develop your own explanation.

For each chapter in chapters 2 - 5, answer the following questions:

1. What piece of the model of earth’s climate is the author trying to explain in this chapter?
2. What evidence (data) does he use to try and convince you of his explanation (i.e. support his claims)?
3. Write an explanation of this part of his model in your own words [in just a sentence or two].

Chapter 6

1. What is the factor the author adds to the model/explanation in this last chapter? How is it different from the pieces he has brought forward as evidence so far?
2. What factor/factors can you add to your model/explanation based on this chapter?
3. Write as complete an explanation as you can of climate based on chapters 2-5 [i.e. assemble the sentences you wrote for each chapter into one coherent paragraph.]

**Part 3**

In this section, the author begins to add detail to the human factors of the climate model. This means the pattern of questions for you will be the same, just with a slightly different focus.

For each chapter in chapters 7 - 10, answer the following questions:

1. What factor of the human’s impact on earth’s climate is the author trying to explain in this chapter (i.e. what is his claim)?
2. What evidence (data) does he use to try and convince you of his explanation (i.e. support his claim)?
3. Write an explanation of the human impact on climate presented in this chapter in your own words [in just a sentence or two].

Chapter 11

1. Write as complete an explanation as you can of the human impact on climate based on chapters 7 - 11 [i.e. assemble the sentence you wrote for each chapter into one coherent paragraph.]

**Part 4**

In this section, the author adds a new factor to the human part of the climate model.

For each chapter in chapters 12 – 14, answer the following questions:

1. What piece of the human’s impact on earth’s climate is the author trying to explain in this chapter?
2. What evidence (data) does he use to try and convince you of his explanation (i.e. support his claims)?
3. Write an explanation of the human impact on climate presented in this chapter in your own words [in just a sentence or two].

Then:

1. Write as complete an explanation as you can of the human impact on climate based on chapters 7 - 14 [i.e. assemble the sentence you wrote for each chapter into one paragraph and combine it with your paragraph from Part 3.]

**Part 5**

In this final section the author brings in the contemporary issues around anthropogenic (human caused) global warming. Continue to build up your model for climate and climate change based on the new human factor the author emphasizes in these chapters.

For each chapter in chapters 15 - 17, answer the following questions:

1. What piece of the human’s impact on earth’s climate is the author trying to explain in this chapter?
2. What evidence (data) does he use to try and convince you of his explanation (i.e. support his claims)?
3. Write an explanation of the human impact on climate presented in this chapter in your own words [in just a sentence or two].

Finally:

1. Write as complete an explanation as you can of both how the earth’s climate works and the human impact on climate based on the entire book [i.e. assemble the paragraphs you have written for each part into one longer, connected and complete explanation.]