# The Maya, the Anasazi and EMFs
## Can we determine patterns in the past to predict the future?

## Introduction

The Anasazi and the Maya, both cultures abandoned in AD900. Through the archaeological record there is evidence that human population through adaptation to their changing environment, exploit their resources which leads to eventual culture failure. But the question is whether there was climate change that caused resources to deplete leaving the culture at full population growth with essentially little resources to eat and it failed. But on the other hand did the civilizations exploit their resources so much that the environment failed around them and caused them to expire culturally.

No one knows the order in which these things happened, but here is the twist. There was a guy named Schumann that detected something-called Schumann Resonance (SR) waves. They are a consistent cycle in the ionosphere, between the surface of the earth and somewhere in space that keeps a certain cycle of 7.83 Hz at the earth's surface. This cycle is kept continual through excited energy like lightening strikes, which increase with temperature. If temperature rises as we think with global warming, then there should be more incidence of lightening strikes right? Well, if these strikes cause more magnetic frequency, then we should be able to detect a certain quantifiable amount of magnetic activity in minerals of soils and rock.

This experimental research would provide a tool to go back in time and detect or measure magnetic quantities in various building components and the soils around them. Using the known sites of the Maya and Anasazi, local data might support the idea of global climate change that induced depletion of resources and caused eventual cultural failure. Or perhaps if it is contrary show that human impact was the cause. But then the next question is-- Why do two distinct populations, on two different parts of the globe fail at AD900?

**Its AD 900**
**Anasazi----------------------------------------------------------Maya**
**What's happening?**

- Dolores River basin Anasazi move in AD 600.
- Population increases over next 200 years
- Aggregate into villages
- Around AD 900 growing seasons are shorter
- Intensified agrarian food production
- Deforest region
- Deplete local soils
- Ultimately abandon area
- Classic Maya Civilization, ceremonial centers,and temples AD 300
- 8-10 million people in population
- Abandon major centers

- High labor in construction
- Power of elite, trade, politics
- Astronomers and sacred calendars
- Rising tide of materialism
- AD 900 widespread abandonment of most major centers
- Breakdown in political and social organization
- Degradation of environment
- Excessive agricultural practices
- Tikal declined in Ad 800
- Declining fertility
- Population falls more than 80%

**Methodology Background**

This research shall follow the methodology of Charles Redman's approach to long-term ecological issues and the Growth of World Urbanism. The emergence of urban society has many new human-environmental impacts that population alone does not contain. Impacts can be less or more depending on human decision making. Things that drive these decisions are conditioned by a variety of influences including demographic, economic/technological, social/political and environmental factors. By understanding these factors and that the increase in numbers is ultimately limited by resources needed to sustain itself, we can gather a greater picture of population and impact.

Understanding the framework for interpreting human transformations of the natural environment according to Redman is shown in the following diagram:

*Figure 1.3 Framework for interpreting human transformations of the natural environment*

*Figure 1.3 Framework for interpreting human transformations of the natural environment*
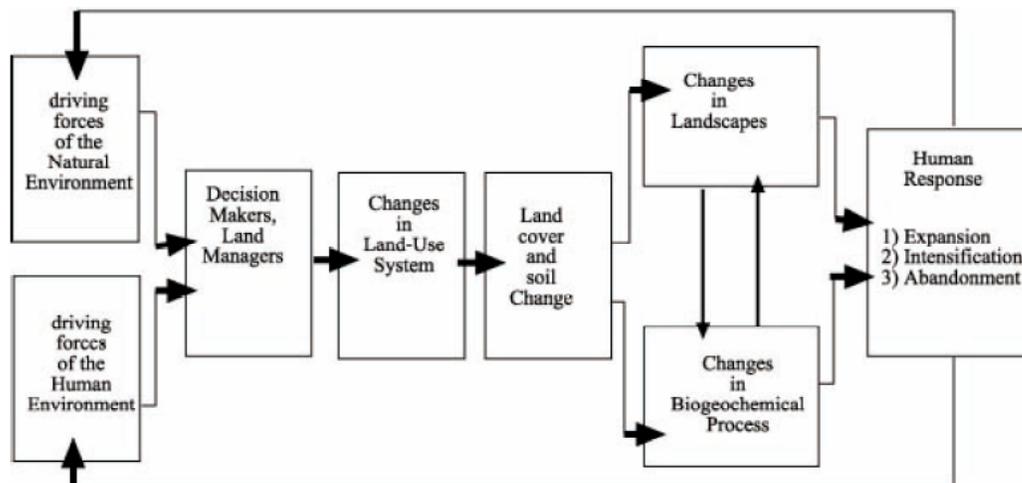
It is through this diagram that we can see that simultaneous actions by both the natural environment and humans can have the same effect. This is what I call *equifinality*; *whereby different processes can lead to basically similar results* which makes it very difficult to assess the spatial and temporal discontinuities between cause and effect. And what we are trying to do here with this research proposal is that very question to determine what was the cause that caused the effect!

**Noted testing procedures**

**Timothy Kohler**, in 1992 studied the Anasazi and population impact of the culture in the Dolores River Basin. He asserts that a growing population led to human-environmental interactions that led people to live in villages, intensify agrarian food production, deforest the region, deplete the local soils, and ultimately to abandon the area. He used several kinds of evidence to show the human impacts, and based it not on climate alone. He found that one key indicator of change was the type of wood used there. By studying wood charcoal found in hearths over varying time periods, he found that the trend of trees started with larger trees moving to woody shrubs and eventually to fast growing trees.

The species of wood used in construction also changed, from older trees to much younger trees. Through the changing species and faster growth patterns he was able to determine that population and exploitation were straining the forests. He

also looked at different species of animals and how that changed over time, and finally studied seeds in the deposits that gave indication to agricultural intensification and a disturbed local environment. (Redman, p.120)

Another example of testing procedures that will help in this research is from **Rice and Rice**. In 1984 they examined sediment cores taken from lake bottoms that showed deposition of phosphorus and silica. An increase in either of these led the authors to believe that erosion, due to a permanent loss of soil, and the construction of stone buildings released large amounts of phosphorous and changed the soils nutrients. By calculating quantities they were able to make conclusive statements about human impact and growth of cities. (Redman, p.143)

The experimental part of this proposal involves the research of **W.O. Schumann** and his theory of the Schumann Resonance (SR) Waves. Simply, 100 or so lightening bolts occur each second in the 2,000 concurrent thunderstorms that happen around the world. These lightening bolts contribute to a low frequency wavelength signal that can be measured anywhere on earth. (Balling, 2001)

**Earle Williams** of MIT has since taken Schumann's original work of 1952, and has made convincing arguments that SR can be a non-linear indicator of global temperature change and Global Warming. Given the known fact that thunderstorms and lightning strikes in the tropical regions are directly related to

lower atmospheric temperatures, the higher the temperature the greater the lightning strikes, and greater frequency in the electromagnetic pulses. (Williams, 1992).

If we can find a method to use SR waves to determine past quantities of magnetic susceptibility, then we can assess whether:

      1) there was an increase in global temperature at each site;

      2) discover correlation with environmental changes at each site;

      3) correlate the findings with the temporal estimates of culture failure.

If this works then we can use this tool to predict if global climate change, more specifically temperature increase, leads to environmental change, cultural adaptation and perhaps eventual failure.

**Research Design**

We would like to propose an experimental research project involving 2 locations for comparative analysis. The first is at the Mayan City of Tikal near Flores, Guatemala. At this location we would like to perform 2 types of tests on the stones of the five major temples including a sample for phosphorus, and a quantifiable sample of magnetic capacity. Also at the site of the temples we would obtain soil core samples to establish some base levels and temporal markers for levels of phosphorus and magnetic minerals.Samples in a nearby bajo for deposition of phosphorus and magnetic materials would also be

conducted.

The second site is the Dolores River basin, a known Anasazi site, in which we would conduct the same testing styles and procedures as the Mayan site noted above, but would also include river and lake samples similar to what Rice and Rice conducted at the Central Peten Historical Ecology Project. In hopes that a lake basin can be found as it is thought to act as a trap in a closed system, that would reveal activities conducted nearby.

These lake cores would also be compared to Rob Dunbar's ocean drilling program. His research as an oceanographer dealing with climate change, has shown that samples in Lake Titicaca, Bolivia had close correlation to ocean samples directly related to climate change. Dunbar has also conducted magnetic susceptibility tests that have shown low correlation with high opal content, and high correlation with low opal content.

**Conclusion**

One day on the front page of a newspaper we read "Global Warming Is Real!" and the increase in temperature has now become a catalyst to our ecological tipping point. Would we change our current exploitation of resources? Would we consider our agrarian practices? Would we change the way we build our cities? Or stop polluting our waters? Would we be shocked to turn the page and see the date of AD900?

If we look at patterns of the past can we use these to predict things in the future? Comparing ancient sites of the Maya and Anasazi, both having known environmental and cultural failures, can perhaps be unraveled a little more in the web of determining cause and effect. If we can find a new experimental research that supports known climate change data, and can be site specific, then perhaps we can determine if in fact global warming can be predicted through past civilizations and the environments they lived in.

**Cited Works**

**Balling, Robert**

2001        *Evaluation of Schumann Resonance as an Additional Method for Accurately Measuring Global Temperatures*, ASU Office of Climatology, http://geography.asu.edu/climatology/exxon.htm

**Dunbar, Rob**

1997        *ODP's Greatest Hits*, Joint Oceanographic Institutions. Massachusetts

**Redman, Charles L.**

1999        *Human Impact on Ancient Environments*, The University of Arizona Press, Tucson.

**Williams, Earle R.**

1992        *The Schumann Resonance: A Global Tropical Thermometer*, Science, v256, p1184–1187.