

The Anasazi flourished in the Southwestern United States for about 600 years, from 600 AD until between 1150 to 1200 AD. But they vanished, leaving traces of a remarkable society, but leaving also clues as to the causes of their downfall.

In his brilliant book *Collapse*, Pulitzer Prize winning author Jared Diamond looks at how societies choose to fail or succeed, the subtitle to his book. Diamond looks at seven prehistoric societies, including the Anasazi, and a handful of modern societies, including Rwanda, Haiti and the Dominican Republic, and how they failed, or in some cases, succeeded.

The history of the Anasazi is illustrative, especially for us here in California. At the time the Anasazi settled the Chaco Valley, in what is now northwestern New Mexico, it was a wide flood plain. Forests of pinyon and juniper grew nearby. Game was plentiful. Chaco Canyon today is a barren, treeless land of deep arroyos. What happened?

The first native settlers were able to successfully farm the floodplain. Groundwater was close to the surface even in years when the stream did not overflow. Favorable conditions led to population increase and soon the Anasazi were farming higher, more marginal areas. This worked when rain was plentiful. When it wasn't, this marginal farmland failed and people starved. The answer? Build irrigation canals. Water that once flowed uniformly across the flat landscape was channelized. This worked until particularly heavy rains caused severe down cutting of the channels around 900 A.D. The groundwater table dropped as a result, leaving the once fertile plain high and dry. In my former work with Ducks Unlimited in restoring and creating wetlands throughout the West, I saw numerous instances of this kind of down cutting, with corresponding drops in water tables. And it can happen quite rapidly--often with only one major storm.

There was another issue working against the Anasazi. The Anasazi method of construction of buildings used both placed stone and wooden beams. Over the course of centuries, their buildings rose from one story to two stories to, eventually, six stories! They obtained their lumber for building and for cooking fires from the nearby pinyon/juniper forests. In the semi-arid, fragile environment of the Southwest, they harvested their wood supply more quickly than it could

replenish. As the water table dropped and slopes were denuded of trees, the land became inhospitable to further forest growth. By A.D.1000 the closest trees were found in pine, spruce and fir forests at high elevations in mountains 50 miles away. And amazingly, the Anasazi harvested these trees and transported them by human power alone to support their building craze.

How did they do this? The Anasazi developed an elaborate trade network and hierarchy of political power. Peasant villages located in fertile pockets outside Chaco Valley provided food to the wealthy ruling class within the valley. They also provided the heavy and dangerous labor to transport those huge logs.

The Anasazi had successfully weathered droughts in 1040 and 1090 when the population of the canyon was less dense and less interdependent.<sup>i</sup> But the drought beginning in 1130, as discerned by scientists in tree-ring data, pushed them over the edge. The complex society of the Anasazi collapsed, and somewhere between 1150 and 1200 AD, Chaco Canyon was abandoned. It remained largely empty until Navajo shepherders reoccupied it around 1800.<sup>ii</sup> Seeing the elaborate ruins, the Navajo named their predecessors Anasazi, "the Ancient Ones."

Diamond has this to say about the breakdown of the Anasazi culture. While there were varying proximate causes, "all were ultimately due to the same fundamental challenge: people living in fragile and difficult environments, adopting solutions that were brilliantly successful and understandable 'in the short run,' but that failed or else created fatal problems in the long run, when people became confronted with external environmental changes or human-caused environmental changes that societies without written histories and without archaeologists could not have anticipated."

So, I've just used about half of my message time today talking about something that should feel eerily close to what we are experiencing now in the West and in many semi-arid parts of the world. We are fed and kept alive by an incredible system of dams and canals. Our forests, long mismanaged, are dying and burning. Rain-caused mud slides have buried communities in feet of mud when the earth fails because of lack of vegetation to hold it in place.

But nowhere, yet, have I spoken about reverence for the land, for Earth. Nowhere have I spoken of humility.

I'll start here: reverence alone will not save the day. The Anasazi had reverence for the earth, at least I assume they did, as do present day indigenous peoples throughout the world. They lacked knowledge of what their actions would do. And they were arrogant in thinking they could fix everything through technology and political systems.

What lessons are we to learn? We have knowledge, denied by some, of what we are doing. We lack reverence. Since the Enlightenment, there has been a steady erosion of the link between religion and science. Scientists such as E.O. Wilson, Richard Dawkins, Neil Tyson deGrasse and others, see science as the new religion. Science will provide all the answers. What we don't know yet, we will soon discern. Enamored of the success of science, they are blind to its shortcomings.

The great Stephen Hawking, who died earlier this month, had this to say about science in the conclusion to his book *A Brief History of Time*:

Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the questions of why there should be a universe for the model to describe.

Hawking should have stopped there, but he goes on:

If we do discover a complete theory, it should ...be understandable in broad principle by everyone. Then we shall all be able to take part in the discussion of why it is that we and the universe exist. (So far, so good.) If we find the answer to that, it would be the ultimate triumph of human reason-- for then we would know the mind of God.<sup>iii</sup>

Know the mind of God? What hubris. The opposite of humility. And we may not be around long enough to have that discussion if we wait for the discovery of a unified theory. As reported in the Enterprise Record several months ago, Hawking himself gave the human race only a very small chance of surviving on this planet.<sup>iv</sup>

Wendell Berry, whom we heard in our reading today, is a philosopher and 4th generation family farmer in Kentucky. He has written extensively on

environmental issues and the way they play out in rural communities. His own state of Kentucky has been decimated by coal mining and agribusiness. He is a strong proponent of decentralization, of vibrant local economies where one is close to the source of what one needs to live. "Though many of our worst problems are big," he writes, "they do not necessarily have big solutions. Many of the needed changes will have to be made in individual lives, in families and households, and in local communities."

And these changes will have to be made with humility, knowing that our knowledge is incomplete and that we have a less than stellar track record of knowing what is best, even for ourselves, let alone the earth. They will have to be made with reverence for the mystery of creation; of what we have and what are destroying.

Some of you know that I spent much of my professional life as a civil engineer doing environmental restoration. I alluded to this earlier. In that work, I slowly came to the realization that, much as I believed in what I was doing, technology alone was not going to save the environment. Ultimately, our will to do that is a spiritual question. With this realization, I, the lifelong environmentalist, scientist and engineer, turned to Unitarian Universalist ministry; a faith where we affirm and promote "a free and responsible search for truth and meaning," and where we "draw on the direct experience of that transcending mystery and wonder...which moves us to a renewal of the spirit, and an openness to the forces that create and uphold life.

It is in the community of this church, in the community of Chico, in northeastern California, the State of Jefferson, if you hadn't noticed, that we are called to live our mission to serve according to our UU principles. Ours is important work, and begins, as Berry says, locally, with reverence and humility.

May it be so.

---

<sup>i</sup> Diamond, 2005, 152

<sup>ii</sup> Diamond, 153

<sup>iii</sup> Hawking, 174-5

<sup>iv</sup> Seen in an article in the Chico Enterprise in the past several months.