

# True sustainability solutions

We live in a world with very limited solutions to our sustainability problems. I often hear the view, “If we would just get off fossil fuels, then our society would be sustainable.” Or, “If the price of oil would just go high enough, then renewables would become economic, and our economy would be sustainable.”

Unfortunately, our problems with sustainability began a long time before fossil fuels came around, and the views above represent an incomplete understanding of our predicament. When fossil fuels became available, they were a solution to other sustainability problems—rapid deforestation and difficulty feeding the population at that time. Getting rid of fossil fuels would likely lead to very rapid deforestation and many people dying of lack of water or food. If getting rid of fossil fuels is a solution to our predicament, it is one with very bad side effects.

A couple of different events this week reminded me about how deeply embedded our sustainability problems are. For one, I had the opportunity to read a draft of a soon-to-be published paper by James H. Brown and a group of others from the University of New Mexico and the Sante Fe Institute called, “The Macroecology of Sustainability.” This paper points out that sustainability science has developed largely independently from and with little reference to key ecological principles that govern life on earth. Instead, sustainability science is often more of a social science, looking at slightly greener approaches which are almost as unsustainable as the approaches they replace.

A second thing that reminded me of our long-term problems with sustainability was a pair of articles in this week’s issue of Science. There is a *research* article called, The Aftermath of Megafaunal Extinction: Ecosystem Transformation in Pleistocene Australia by S. Rule et al, and an accompanying *perspective* article called The Hunters Did It by M. McGlone. The perspective article explains that there had been a controversy as to why marked changes in habitat took place shortly after humans settled Australia. Some thought that the loss of forest and animal extinctions were the result of climate change. New research shows that the changes almost certainly came from hunting and the use of fire by humans. This is further evidence that humans did not live sustainably, even when they were still hunters and gathers. (See my earlier posts, European Debt Crisis and Sustainability and Human population overshoot—what went wrong?)

Below the fold, I will offer some ideas about truly sustainable solutions.

**Truly Sustainable Solutions**

Humans at this point do not fit in at all well with the natural ecology—the natural systems of plants and animals. In fact, we have disturbed these systems greatly, making natural systems “fit” into the little niches we have reserved for them. In order for humans to fit back into natural systems, it almost seems as though humans would have to evolve to become more like monkeys or gorillas. We would need to stop living in houses, wearing clothes, and cooking our food. It would be helpful to be able to live in trees, to stay away from predators. Somehow, this doesn’t sound at all appealing, or likely.

But if we think about the situation, it yields a few ideas regarding where we need to be, if we are to live in an ecologically sustainable way:

1. In terms of local foods, we need to focus on foods that truly grow wild, or with very little support, in our area. We may need to discard some foods that can be grown today, but which require soil amendments which must be hauled from a distance, sprays for insects, irrigating, or much tilling.

2. To limit our ecological impact, we should be eating plants and perhaps small animals (including birds, fish, and insects) that reproduce in large numbers. We certainly should not be eating cows and pigs grown on industrial farms. The food we eat should be minimally processed—not packaged or finely ground. If we could eat food raw, that would be ideal, from the point of not disturbing other systems. The human digestive system has evolved to work better with cooked food, however, so cooking will probably be necessary, perhaps using solar cookers.

3. Our housing should be simple. We certainly shouldn’t be building more huge houses and buildings. We shouldn’t expect buildings to be heated very much, and probably not be cooled at all.

4. Walking should be our primary means of transportation. Perhaps dug out canoes or rafts would also be suitable for fitting in with the ecosystems.

5. Medical treatment should largely disappear, because it interferes with normal evolutionary processes and because it tends to leave a large dependent elderly population. It also tends to lead to far too high a population in total.

6. We probably need to live in smallish groups (<150 people) and have an economy based on a gift economy. With such an economy, people gain status by what they give

away, rather than what they accumulate. Land would probably be shared in common. No one would be wealthy.

### **If Truly Sustainable Solutions are Impossible**

If truly sustainable solutions are virtually impossible, then what do we do? There are 7 billion humans on earth. If human populations were similar to those of monkeys or gorillas, there would probably not be more than 1 million (with an “m”) humans in the world, mostly living in warm places. Our basic problem now is that there are far too many of us.

Some choices that might slightly reduce our impact:

**1. Reduce our incomes.** The amount of resources a person uses is mostly determined by a person’s income. If a person cuts back on his income, he will use less. Trying to cut back within the same income is less effective, because the money a person doesn’t spend one place is likely to be spent somewhere else. (This is one reason that many attempts at being “green” don’t really work out.)

**2. Plant at least some food crops.** This too, disturbs the natural ecology, but it is about as good as we can do. If perennial plants are planted, it is possible that others will benefit as well. Animals, birds, and insects may also get some benefit from the crops.

**3. Share what petroleum is available more equitably.** If I use less oil, by driving a smaller car, or by driving fewer miles, it doesn’t mean that petroleum will be left in the ground. What it does mean is that the gasoline or diesel that I didn’t buy will be available for someone else to buy. This rather strange result happens because total oil supply is pretty much “maxed out”—total world oil supply doesn’t increase by very much, even with more demand. Instead, all that happens is that price rises. If I use less, price may drop a bit, but the same amount of oil in total will be consumed. So by using less petroleum, someone else, somewhere can use more. The result is better sharing of what oil is available.

**4. Have smaller families.** One child, or even no-child, families are to be encouraged.

### **How about all of the “green” things that we hear about?**

I have a hard time believing that most of the “green” solutions presented to us today are more than marginally beneficial from an ecological point of view. Even substitutes like wind turbines and solar PV have their difficulties. Most of the time wind and solar PV are used as parts of large electrical grids, and the grids themselves are not sustainable. In addition, we have to disturb natural ecological systems to make and use these systems. The intermittent electricity they produce is not a reasonable substitute for petroleum, which is the fuel we are having most difficulty with.

The problem our economy is facing now is recessionary impacts associated with high-priced oil. High priced substitutes are even worse, in my view. If low-priced substitutes for oil are available, they may make sense. For example, if natural gas could substitute for oil that would be a small step in the right direction, but even natural gas has its difficulties—it too produces CO<sub>2</sub> when burned and it is out of synch with the natural ecology.

If there are “green” solutions that are helpful and not too ecologically disturbing, I expect that most of them will be smaller and simpler—for example, small windmills made with local materials, or small water wheels. Recycled materials may be used for some of these—perhaps parts of old autos or recycled building materials.

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