- « Stone Age Freedom
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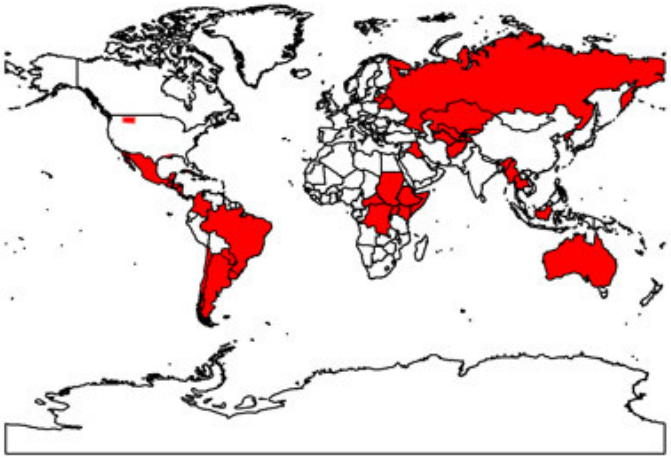
22 February 2006

Timeline of Collapse

by Jason Godesky

Collapse is inevitable. We know this; it's a basic function of civilization. A civilization that doesn't collapse is like a fire that doesn't burn. As we saw in the Thirty Theses, the question is not *if* our civilization will collapse, but *when*. Steve Lagavulin's "Timeline for Unfolding Crisis of Mankind" was one of the first attempts to piece together a timeline of the collapse we are expecting, and I could copy his caveats almost verbatim here. Predicting the future is frought with peril. Predicting specifically which factor will deliver the *coup de grace* is almost impossible. This exercise is possible *only* because there are so many factors converging in a very short time frame, that the probability of at least one of them exerting sufficient stress to end our civilization becomes very, very high.

First, we need to understand that collapse is not a future possibility, but a present reality. Though it is by no means perfect, the map I used in thesis #26 is still useful:



A peer polity system must stand or fall as a system (*see*, "We All Fall Down"), so collapse in the modern world is always met with an influx of energy from more densely complex areas to prop it up. This can be seen in the influx of investment in the former USSR, the current involvement of the United States in the Middle East and Central Asia, the efforts of the UN and various other international organizations in central and western Africa, the meddling of the United States in Latin America, and the reconstruction of the Gulf Coast after the destruction of Hurricane Katrina. In *Collapse*, Jared Diamond makes convincing arguments that we should consider Montana and Australia as well in a state of collapse, propped up only by the modern peer polity system.

As we can see in the map above, there is very little left of the world that is *not* in collapse, propping up everything else. The process of collapse is, at present, quite advanced. All it needs now is one last pressure to push the whole system over the edge, and there are a number of such factors lining up for the next decade.

Let's take a look at each of those factors, and see why it is that a consistent timeline begins to emerge from each of these factors.

Peak Oil

In thesis #18, we discussed how Peak Oil could be a factor in collapse. Namely, if the depletion rate is too high (Stuart Staniford of the Oil Drum guessed "too high" to be anything over 11%), then there will be insufficient time for society to adapt. A massive depletion of energy is a massive depletion of complexity, and such a self-reinforcing, catabolic process continues until civilization is gone.

In "Peak & Crash" we discu[illegible] at was prev[illegible] re[illegible] Jeff Vail explained, this suggests that *all* of OPEC's reserve estimates were doubled. That suggests that, rat[illegible] pe[illegible]uld have peaked so[illegible]gests w injection and water flood techniques to[illegible]

> The problem with this is that when a field who's production rate has been artificially sustained beyond the half-way point finally does begin to decline, its rate of decline tends to be very, very high. 10-18% has been suggested (by Simmons and others) as the decline rate for fields that have been pressed to the limits with injection technologies. This is critical, because while Peak Oil may be a quite manageable problem at 2% depletion, 10%+ depletion means that world production will fall by half in less than 7 years.

Using the peak of the North American oil supply in 1971 as a model, we might expect a decade from peak until we start to really feel the pinch, but if this is correct, we can expect depletion rates in great excess of the 11% that Staniford estimated as the threshold of collapse. With half as much petroleum in 2013, we would be facing the first rumblings of collapse by 2010, unmistakable signs by 2015, and by 2020, civilization's global hegemony would be broken, with only a few, much reduced cities holding out.

Global Warming

Though civilization prides itself on its divorce from the natural world, all life remains dependent on our ecology–even human life. Civilization is even more at the mercy of the elements than other modes of human culture. The precarious nature of agriculture (*see* thesis #9) makes the civilized food supply utterly dependent on a very small number of closely-related, fickle cereal grains that require very precise parameters of temperature, soil, acidity, rainfall, etc. Those parameters are about to change drastically.

We have recently broken a sort of "tipping point" regarding global warming, as we discussed last August with, "Siberia's Permafrost is Melting." An increasing number of scientists are now saying that it is too late. The warnings sounded since hte 1970s went unheeded, and now the globe is warming under its own feedback loop, regardless of what we do.

WHO concluded that 160,000 people die from the effects of global warming every year, and they expect this number to double by 2020–with 3,000-4,000 in the U.S. alone. By 2015, Mt. Kilimanjaro will no longer have an ice cap. Rising sea levels could wipe out most of our cities (which tend to be on coasts, or at the very least, rivers) as the polar ice caps melt.

The frequency of extreme rainfall events (EREs) will increase between 30 and 110 percent (depending on the region) by 2015. The increase in torrential rains cause significant damage to ecology, agriculture, human habitat and infrastructure (houses, schools, hospitals, shops, public utilities, sewerage, roads, bridges…). EREs disrupt all human activities and result in loss of topsoil, human and animal life. In other areas, it will be severe *drought* that is the problem.

The full effects of global warming will continue to unfold over the centuries to come, but we are already seeing the first effects, as with the extinction of the Gulf Stream and the resulting hurricanes in the Gulf and bitterly cold European winter. We can expect these effects to intensify, and to even be joined by other problems, such as "water wars." We are already seeing the first troubles with global warming, and they will continue to escalate until they reach levels that threaten the very survival of our civilization, probably in a timeframe of 2010-2025.

This report concludes:

> Unless global energy consumption is reduced rapidly–by no later than June 2006–to about 60 exajoules (6E+19 joules) or less each year (this level is about 13 percent of total global energy consumed in 2005 and is equal to the total energy consumed in the year 1910), the runaway positive feedback loops for the destruction mechanisms … (ozone holes, global heating, extreme climatic events, toxic pollution, resources depletion, war, unethical behavior, and disease pandemics) pass the point of no return, overwhelm and destroy the life support systems. Nearly all major cities (cities with a population of about 1 million or more) become mostly uninhabitable by 2015.

Mass Extinction

As we saw in thesis #17, we are already in the midst of the most severe mass extinction in the history of the planet. By 2014, it is expected that 50% of the species in the rain forest will remain. By 2015, the tipping point will be breached, and only 45.9% will remain–less than half. In 2012-2015, only 10% virgin rain forests will remain, leaving only 50% of rain forest species. This is a vital threshold in the process of mass extinction, because most of the earth's species–and most of the earth's oxygen–comes out of the rain forests. Breaching this threshold threatens escalating cascades of extinction and critical ecosystem failure that could even threaten the survival of our species.

Synergy

The most insurmountable crisis we face is not any one of these factors in isolation, but the fact that they compound one another. The first major U.S. city to collapse, New Orleans, evidences how this works. Hurricane Katrina entered the Gulf of Mexico as a weak Category I hurricane, but the hot waters of the Gulf (heated by the extinction of the Gulf Stream, due to global warming) turned it into a massive Category V that broke New Orleans' levees and submerged most of the city beneath the brackish, polluted

waters of the Gulf. It also shut down Gulf oil production, which is also where most of the United States' refineries are f and wh imports come in. This exacerbated the energy situation, prompting Europe to open its strategic oil res or th Europe's energy pro th fell political tensions between Russia and U s of th ed States' major port on the Mississippi backed up grain exports, which will likely result in significant famine in months, or even years, to come.

So we see the intricate patterns in which these problems interweave, reinforce, and ultimately make a single crisis that is far more formidable than the sum of its parts. Yet, even the synergistic crisis of civilization is set by the same timeframe as its constituent elements. All of them are problems right now. All are escalating. All reach significant thresholds, inflection points, or crisis levels in the general timeframe of 2012-2015. All become insurmountable by 2020.

No Longer a "Possibility"

Collapse is no longer a future possibility, but a present reality. By 2012-2015, we can expect this reality to be patently obvious. By 2020, civilization will be in full-scale collapse. Individual cities or carved-out fiefdoms might persist for a century or more, just as in most collapses where a few pockets struggled on for some time. But by 2020, we can confidently expect civilization's global hegemony to be permanently broken. There may be pockets that remain, but they will also be relatively easy to escape. Large expanses will be unclaimed, and the pockets that remain will be incapable of asserting any claim over them. Those spaces will open up, where humanity will be able to live freely.

The scars of civilization will ultimately heal. The albedo effect that once balanced global warming is now diminishing as the ice caps melt, but once a thick girdle of desert has been roasted about the earth's middle where everything is dead and only lifeless, white sand remains, won't that be another albedo effect? The earth was once a snowball, and life was able to temper that. Life finds a way.

The key for any would-be survivor will be adaptation. As our climate zones shift pole-wards, we'll need to migrate with them. New growth forests pop up relatively quickly, and air quality rises almost instantly. We'll live to see the beginning of the earth's healing. We won't live to see the granduer of old growth forests again, and it will be centuries before the process of global warming we've kicked off is righted again, but we will see better days–even if we won't see *perfect* days.

The key is to divorce ourselves from civilization. The Tribe of Anthropik has adopted a "deadline" of 2010, and so far, everything is on schedule, and we remain confident that we can meet that deadline. That is a good thing, because every new piece of news simply confirms again that the Maya calendar might have something to it, after all.

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2. […] Civilization is unsustainable, and there's one thing all unsustainable systems have in common: they're never sustained. In the case of our own civilization, the converging crises of 2012-2015–from the peaking of global oil production, climate change, mass extinction, and ultimately the synergy of these factors and the diminished capacity of our complexity to meet them–makes it seem very likely that our current state of collapse will be painfully evident within the next decade, as we pass a major inflection point in that descent. A century from now, there will no doubt still be cities, where life is nasty, brutish and short, but it is difficult to imagine a plausible scenario where civilization's global dominion is even able to last another 15 years. Civilization will become just one of several means of organizing human society; by far the most brutal and unpleasant one, and for that reason if for no other, one that will ultimately lose ground and become, save in exceptional, small, isolated pockets, a bad memory. […]

   Pingback by The Anthropik Network » The Escape Plan — 5 June 2006 @ 10:38 AM

3. […] Vidal's article includes predictions for the complete breakdown of China's economy by 2015, due to water problems. […]

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generally what we've called "collapse" here, when that window of opportunity opens. We're predict window to be something like 20[illegible]ss of re[illegible]g as solely a question of practical skills, we are lost. Our domestication entailed far more than just the destruction of our bodies and the atrophy of our independence; it also entailed the enslavement of our minds, the separation of mind and body, the profound mistrust of our senses, and our abandonment to a purely human discourse when the intuitive, anthropomorphic voices of animals and plants and rocks and rivers fall silent, and all we can hear are our own voices, talking to ourselves. […]

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5. **Timeline of Collapse**

   I'm very sorry to be posting another doom & gloom blog entry, but I think its…

   Trackback by tribe.net: anthropik.com — 25 October 2006 @ 6:47 PM

6. […] But if we focus again from the historian's broad sweep of history down to a more personal level, we can also see that there is a significant difference between the disappearance of the last pockets of civilization, and the first areas opening up on the map again. Between 2012 and 2015, a whole constellation of problems will reach their inflection points at nearly the same time. Somewhere in that time frame, we will most likely experience our "apocalyptic shift," the inflection point in the curve of the "long descent" that we will experience as the end of civilization. Civilization won't disappear overnight, though it might feel like it had. By 2015, the trend of "the opening of the map" (basically "the closure of the map" run in reverse) should become increasingly relevant. The areas most difficult and marginal for civilization to exploit will become increasingly free of civilized influence, as the energy to exert power there will cease to exist. Long before civilization disappears, it will weaken. The space in which to live beyond civilization will open up long before the last city becomes a ruin. There are already some areas in the western half of North America where it is difficult to exert control; even in the east, one man was able to live in the Adirondacks for 20 years before he was caught. These spaces will grow as civilization collapses, and that growing alternative will provide one of the strongest accelerating trends in collapse. Historically, civilizations have never been able to tolerate other ways of life. The living example of life beyond civilization made it extraordinarily difficult to keep people from "going native." The first colonists in the New World had "gone to Croatan" before the next boat from England arrived. Without the expanding energy base to exterminate such examples as civilizations did in the past, the example of a more human way of life will only further accelerate the accelerating trend of collapse. […]

   Pingback by Living in Collapse (The Anthropik Network) — 15 June 2007 @ 2:15 PM

7. […] http://anthropik.com/2006/02/timeline-of-collapse/ […]

   Pingback by Crashthulhu « Gamestribe Blog — 23 January 2008 @ 3:53 AM

8. […] February 10, 2009 Works 2 - info Posted by arctic1809 under Uncategorized http://anthropik.com/2006/02/timeline-of-collapse/ […]

   Pingback by Works 2 - info « Arctic1809's Blog — 9 February 2009 @ 7:58 PM

Comments

1. I admire this piece of work, especially your distinction between "civilization's global hegemony" and "pockets of civilization."

   Ran Prieur made a similar argument as well. It's not against collapse.

   Comment by aksum — 22 February 2006 @ 3:38 PM

2. "The key is to divorce ourselves from civilization. The Tribe of Anthropik has adopted a "deadline" of 2010, and so far, everything is on schedule"

   Does the deadline of 2010, include throwing off the shackles of paid employment at that point?

   Also do you view the 2010 year, as the last bit of time before things become to crazy to straddle primitivism with modernity?

   I would agree with you that 2010 would be a good estimate of when people should seriously make more primitive living a full-time reality. This is the proverbial leap of faith that will probably prevent much more than the 1% (you often mention)of people from managing the collapse.

It's kind of like bungie jumping off the titanic, civilization even when crumbling quickly still appears mighty in i dth and [illegible] (even if secretly impotent to its own demise), but you still have to time the jump off, if you wait too l u the ship, if you lea y survi thrive (i.e. Skills & Survival Kno

I've never bungie jumped personally, but I think by 2008, the 'writing will be on the wall' for those who know how to look through the fog of anesthetic lies promoted by the majority.

Comment by Bubba — 22 February 2006 @ 3:40 PM

3. Rather, it makes a distinction between "total" collapse and certain "surviving" pockets which may persist.

   Comment by aksum — 22 February 2006 @ 3:41 PM

4. Does the deadline of 2010, include throwing off the shackles of paid employment at that point?

   2010 is when we want to be independent of civilization, so that the only thing we rely on civilization for, is the money to pay the robbery that civilization demands, i.e., taxes, hunting and fishing licenses, etc. That probably means no more full-time employment, but it will probably require some kind of income flow to continue. But at that point, if the income flow stops, it's probably because our only need for it stopped, too.

   > Rather, it makes a distinction between "total" collapse and certain "surviving" pockets which may persist.

   To my mind, a few broken pockets was just implied by the very idea of collapse, but I could tell from responses I've gotten that not everyone shares that view.

   To my own thinking–if it's a tiny city a thousand miles away that can't touch you anymore, why does it matter?

   Comment by Jason Godesky — 22 February 2006 @ 3:54 PM

5. Of course it doesn't. That's why I think arguing about surviving pockets is a ridiculous debate.

   Comment by aksum — 22 February 2006 @ 3:57 PM

6. Unless, of course, you're close to those surviving pockets. Pompous dictators with egos that out weigh their actual power by many times are only amusing when viewed from a distance.

   Comment by Benjamin Shender — 22 February 2006 @ 4:18 PM

7. Algorithm to escape pompous dictator who happens to be in your backyard:

   1. Start walking.
   2. At the end of the week, stop.
   3. Enjoy the view. You are now further than Pompous Dictator's armies will ever be able to march.

   Comment by Jason Godesky — 22 February 2006 @ 4:24 PM

8. Jason,
   You have mentioned before that Anthropik has a timeline for being free of civilization. If this exists as a document would you be willing to share that with the rest of us.

   Jimfive

   Comment by JimFive — 22 February 2006 @ 4:28 PM

9. **2006**: We have a schedule of primitive skills classes lined up for the whole year. By autumn, we'll have graduated "advanced primitive skills," which is always a good start. We'll be going fishing in the spring, and by fall, we'll be hunting. My New Year's resolution: Get on the paleo diet, and before the year is out, kill and eat some animal.

   2007: Year-long primitive skills course. School as yet undecided.

   2008: Buy land. Begin living off of it.

   Two years slack time, in case we fall behind schedule; or, two years of living off our land with a safety net.

   Comment by Jason Godesky — 22 February 2006 @ 4:34 PM

10. Brief clarification: I think that specific major fields and probably some of the major Middle East oil producers as a whole are already well past peak, with their current production only propped up by various technologies to include injection. In general, if one accepts that OPEC's mysterious reserve increases in the '80s were spurious, then I think tht puts the world's

liquid hydrocarbon [illegible] nature of [illegible] [illegible] clearly [illegible] because the [illegible] It is [illegible] and unexpectedly [illegible]
[illegible] beam: you can slide your weight very close to the center and have no effect, but the moment that your center of mass passes the fulcrum the entire system swings dramatically in the opposite direction. Or, from a more academic perspective, it's when a system shifts from one attractor to another. What I mean by this is that our system of global economy depends on the fundamental assumption that growth will continue. This is necessary for all aspects of our lives that involve finance, loands, credit, currency, inventory–in short, all "modern" economic activity. If the majority of the population of the world involved in this modern economy suddenly understood what is outlined in Jason's article, that alone would be sufficient to shut down the system immediately. No one gives a loan if they thing that the person won't have the ability to earn money to pay it back. No one buys a corporate bond or keeps money invested in the stock market if they think that it will be worth less in the future than it is now. Our entire way of life is predicated on investing in the future, on the assumption that this is rational due to the expectation of growth. When such activity is no longer "rational," it stops, because whatever problems there may be in economic theory, it remains true that people do what they **think** is rational (which, of course, has no necessary link to reality, and is really more an issue of psychology). So as these events unfold, they will very gradually slide the center of mass of public awareness ever closer to the fulcrum of the balance beam. At some point, it is possible that the collective inividual awareness of this reality will be the actual force that will shut down the system, not the realization of any of the separable and substantive factors behind that realization. Sure, those substantive factors are, as pointed out, quite capable of causing that collapse on their own. IF public awareness crosses that fulcrum before any of the substantive factors cause enough stress on the system, the system will still shut down. This is relevant because it means that collapse can happen before there is any sufficient combination of substantive causes. Personally, this seems pretty unlikely given the hypnotized state of the public at present, but history–and chaos theory–teach us that we should never underestimate the potential for a sudden, systemic shift. There have, after all, been times when it didn't take a weatherman to tell people which way the wind blows…

Comment by Jeff Vail — 22 February 2006 @ 8:48 PM

11. []
    Wonderful post, Jason.

    Just to respond to Jeff's point, why do you think the long term (10 year) Fed interest rate just will not go up, no matter how much the Fed tries to push it up…eh?

    It will come soon enough, my friends. I tend to think that it will be slow and it will be painful.

    (Of course, then again, I've always been one of those people who would rather cut something off in five seconds instead of enduring a ten or twenty year pain…)

    If we get 5% of the population understanding this set of problems and 1% of them able to integrate the set into a world view, then we have accomplished something…eh?

    Kudos to you.

    []

    Comment by Prof. Goose (TOD) — 22 February 2006 @ 9:30 PM

12. The Fed can't set the rate on 10-year issues. All they can do is buy or sell those issues to influence the price & rate, and in the process influence the money supply. So if they really, really want to drive up the rate, they'll buy all they can at spot price. This will send the money supply through the roof, vastly devalue the dollar, and may in itself be the trigger event in global economic collapse. So the Fed's ability to drive up the 10-year rate is constrained at least to some degree by the bounds of people's expectations about the growth of the US economy making good on the time-value-of-money that is represented by such long-term rates.

    People buy bonds because they think it's a good investment–very few (only for the sake of avoiding all-ness statements) are consciously trying to lose money. So if they believe that in the very near future the US government will be completely insolvent, along with all other governments, they won't buy bonds at 5% or 500%. That's a pretty extreme belief–and one that I don't think is yet warranted if you define "very near future" as a couple of years. But if and when that belief is the standard view…

    Comment by Jeff Vail — 22 February 2006 @ 11:06 PM

13. I have been generally impressed with the level of analysis that takes place on this site and in particular the application of Tainter's interpretation of a civilization's lifecycle to explain our current situation. What happenned with this piece? I don't believe Tainter would sketch out a timeline anywhere near as dramatic as what you have submitted. Your assumption of a catabolic collapse centerring on Peak oil is a bit of a stretch as even a cursory review of ASPO projections indicate that this is unlikely. Maybe its time to get out your copy of Collapse of Complex Societies, turn down the heat a bit and rebake

Comment by Mark — 22 February 2006 @ 11:36 PM

14. Mark, Tainter's theory actually was that collapse occured on such a dramatic timeline. Tainter defined collapse as something that occured that was sudden and "no more than a few decades."

    As for a catabolic collapse, that was a theory invented by John Michael Greer, a man who pointed out that Tainter's model regarding the timeframe was not entirely true. Tainter believed that all historical collapses were sudden. Greer pointed out that there were exceptions (like the fall of Rome) and that not all collapses were sudden–others occurred over a period of centuries. That is, some collapses were sudden, others took longer. He also pointed out the difference between a maintenance crisis and a catabolic collapse, and sometimes, those crises work together in a collapse.

    Also, the timeline of collapse is subjective on how you define collapse. Consider the Mayan collapse. The book "1491″ believes it collapsed between 800 and 840. John Michael Greer say 780 and 910. Jared Diamond put the dates between 760 and 910. Yet those people define collapse differently, and to their definition, that was when collapse occurred.

    Comment by aksum — 22 February 2006 @ 11:44 PM

15. End your book with these positive ideas and sales may help Anthropik's goals.

    Comment by Rick Larson — 23 February 2006 @ 12:11 AM

16. Hey –

    I wrote the following bit at IshCon… the stuff in "–" is from there and is only going to be understood by those who have read and understood Greer's paper. Please skip it, all it does is lay the foundation for what I'm saying.

    –
    Greer critiques Tainter's model of collapse, and rightfully so, for not including an accurate portrayal of the timeframe of a collapse. But Greer fails to adequately propose an alternative model for the timeframe of collapse. Since Tainter's attempt at including a timeframe in his general model is flawed, I wonder if we could establish a number of criteria that would help us examine the timeframe in which a civilization would collapse. I think it would be important to distinguish between a maintenance crisis and a depletion crisis when determining this timeframe. Another good guideline seems to be how far past the point of diminishing returns each facet of complexity is. Greer notes that all resources are not created equal:

    > First, resources may not be sufficient to maintain indefinite expansion. Here the use of "resources[?]? as a single variable must be set aside briefly. Each resource has a replenishment rate, r(R), the rate at which new stocks of the resource become available to the society. For any given resource and society at any given time, r(R) is a weighted product of the rates of natural production, new discovery of existing deposits, and development of alternative resources capable of filling the same role in production. Over time, since discovery and the development of replacements are both subject to decreasing marginal returns (Clark and Haswell, 1966; Wilkinson, 1973; Tainter, 1988), r(R) approaches asymptotically the combined rate at which the original resource and replacements are created by natural processes.
    >
    > Each resource also has a rate of use by the society, d(R), and the relationship between d(R) and r(R) forms a core element in the model. Resources used faster than their replenishment rate, d(R)/r(R) >1, become depleted; a depleted resource must be replaced by existing capital to maintain production, and the demand for capital increases exponentially as depletion continues.

    Thus, the extent of a particular society's dependence on a resource is one factor, while the replenishment rate of that resource is another factor. It would seem that a depletion crisis involving a critical resource without a high replenishment rate would make for a much swifter collapse. The two strategies Greer outlines for societies that have reached the end of their anabolic cycle are as follows:

    1. "… move toward a steady state in which C(p) = M(p), and d(R) ≤ r(R) for every economically significant resource. Barring the presence of environmental limits, this requires social controls to keep capital stocks down to a level at which maintenance costs can be met from current production, and maintain intake of resources at or below replenishment rates."

    2. "… attempt to prolong the anabolic cycle through efforts to accelerate intake of resources through military conquest, new technology, or other means. Since increasing production increases W(p) and increasing capital stocks lead to increased W(c), however, such efforts drive further increases in M(p). A society that attempts to maintain an anabolic cycle indefinitely must therefore expand its use of resources at an ever-increasing rate to keep C(p) from dropping below M(p). Since this exacerbates problems with depletion, as discussed above, this strategy may prove counterproductive."

    It seems obvious that those societies that attempt to prolong their anabolic cycles as long as possible without returning to a steady state will collapse more quickly. The more successful a society is at extending its anabolic cycle, the less opportunity

it has to return to a steady state due to resource depletion. Thus, this is also a good guideline for determining the time frame of a collapse.

So to review, in plain english this time, the timeline of collapse seems to be determined by:

1. whether it is a maintenance crisis or a depletion crisis;
2. the rate of depletion and replenishment of key resources;
3. how far past the point of diminishing returns each aspect of complexity is;
4. whether the society attempts to prolong the anabolic cycle of growth, as opposed to using resources to maintain a steady state; and
5. the cultural and political factors that make catabolic collapse difficult to contemplate, avoid, and mitigate.

What this means for civilization does NOT look good. If we look at these criteria and apply them to the system we're currently in, we instantly come up with a number of signs that the collapse will happen very quickly. First of all, industrial civilization's dependence on oil and other fossil fuels is complete, and at the present moment we're depleting those at a phenomenal rate. Secondly, these resources have a replenishment rate on the order of geological time. Third, the structure of the economy is such that it will forever throw all of its efforts toward the attempt to prolong the anabolic cycle, and none toward the attempt to achieve a steady state economy. (Illustration: No corporation strives to not make a profit. They are legally bound to put profits above all else.) Also, given the structure of our political system, no politician in their right mind would dare try to solve systemic problems. This is political suicide. (And even if they were to try, their efforts would simply be undone when they were voted out of office. e.g. Jimmy Carter) As Greer notes, "Cultural and political factors may also make efforts to avoid catabolic collapse difficult to accomplish, or indeed to contemplate." Nearly all of the institutional ingenuity and creativity of civilization is geared toward the goal of perpetual expansion.

All of this points to the conclusion that civilization will collapse very quickly when it does. Unfortunately, it also points to the conclusion that civilization will try its damnedest to keep expanding until it has simply reached every limit there is. This will likely exacerbate the problems of increasing climate instability, catastrophic losses of biodiversity, and so on.

For those who are still having a hard time understanding what I'm getting at, I'm just agreeing with Jason that it's going to happen quickly (at least in America). I'm thinking on the order of a decade to two decades.

This is all intellectual wankery and estimated guessing, though. When it comes down to it it's just something I've spent a long time learning about that can be useful.

Anyway, that's all for now. I'd like to hear your thoughts on this, Jason.

- Devin

Comment by Devin — 23 February 2006 @ 1:46 AM

17. The Mayan had lots of calendars but the one that was used in daily life was the Tzolkin which had a 260 day cycle, made up of 13 numbers and 20 symbols. Your name was the same as the name of the day you were born on, which was also your function in the community.

    A year and a half ago I encountered a system that was developed by Carl Calleman and Ian Lungold. This is a different system than presented by Jose Arguelles. In the Calleman system there are nine cycles, each one which is 1/20 the length of the previous cycle, but the same amount of change occurs in each cycle. The first cycle started 16.4 billion years ago, the sixth at 5116 years ago with the start of patriarchy. We are currently in the eighth cycle which started Jan 4th 1999 and ends Feb 10th 2011. The ninth cycle is only 260 days long, but will still experience the same amount of change as each of the other cycles.

    Overview Of Mayan Calendar has some charts and tables that make this easier to see. In addition within each cycle there is a similiar pattern concerning when the old starts to break down, which directs the creation of the new, so that when the old does collapse it makes way for the new. Evolve or die is happening at each level depending on the core issue: the fifth was about art and culture, the sixth was about law, the seventh about power, the eighth about ethics, and the ninth about co-creation. A very elegant timetable that continues to be on schedule. This isn't about waiting for a final date, but about going through a process of acceleration leading up to that date. I think these guys are on to something.

    Comment by ov — 23 February 2006 @ 4:52 AM

18. Hmm, back to the Mayan Calendar again? Coincidences may be a scientific rarity, although they certainly still exist. 2012 appears to be a solid estimate at this point, although 2015 & 2010 both are probably pretty good as well, since we will have to see how things fall into place within the next few years. Civilization is so complex, and that its much more likely to fall hard, quicker than many might assume. Although again we need to define, collapse, since 1st world countries are more likely to go through a brief stage similar to what 3rd world countries are dealing with, limited food/water, armed gangs (govt' or non govt) etc.

    I'm a fan of the predictive power of facts that exist currently, and basing predictions on those–although they are in a flux.

Sufficient hurricane activity & a couple Civil wars, and the time frame for all this moves up significantly. Nigeria, Iraq, Gulf Coast–and Bam, things begin to look more like 2008 as a collapse year. We will see, best to keep you the ground, and min

Comment by Bubba — 23 February 2006 @ 10:03 AM

19. Mark,

    I part ways with Tainter in the application of his model. Tainter argues that we *cannot* collapse, because we are part of a peer polity system, so no one polity can collapse. That is true, but peer polity systems have collapsed before–they just do so as a peer polity system, rather than distinct polities. I wrote about this in, "We All Fall Down." So, naturally, Tainter and I are not going to agree on much of anything regarding application after that.

    We've examined a number of possible factors contributing to collapse, of which Peak Oil is only one. If Peak Oil were the only factor, I wouldn't be nearly so certain. What makes the case sufficiently strong to make such a bold claim is the fact that we are facing so many crises, simultaneously, that all reach significant inflection points, or cross significant thresholds, all in the same, short time frame of 2012-2015. As Aksum already pointed out, "suddenness" is part of Tainter's definition of what "collapse" means. In short, if Peak Oil, global warming, or mass extinction are going to have any role in collapse, then that collapse must reach crisis levels in 2012-2015, and occur suddenly. If it does not, then Peak Oil, global warming, and mass extinction will have nothing to do with it, and we'll collapse at some later time due to an entirely different set of factors. But for all of the factors we've considered here, they are factors *if and only if* they happen quickly, and soon.

    Now, when looking back, historians often note a long period of decline prior to actual collapse, but you'll note that contemporary records, while generally giving some hint of decline, generally consider their civilizations stable and secure. If there are historians to look back at our current crisis, I think they might trace our "decline" all the way back to 28 June 1914–the day that Archduke Franz Ferdinand was shot in Sarajevo. The result of World War I (and World War II–the two conflicts were so closely related one could almost consider them a single war with a brief "time-out") was the dissolution of the European empires. Such a breakdown of political power into smaller units is one of the most important signs of collapse, like the division of the Roman Empire. The following Cold War, as Tainter described, created a peer polity system with only two peers; the end of that saw the further dissolution of political power into successively smaller units. So, in many ways, the period from 1914 to the present resembles the periods of decline noted in many previous civilizations.

    That said, I think Greer's most significant contribution is the idea of catabolic collapse as an equal and opposite process to anabolic growth. We understand how our society is compelled to grow as much as possible, and we understand how this is a self-reinforcing feedback loop. Catabolic collapse as a similarly self-reinforcing feedback loop, and thus a process that *accelerates* itself, makes it easier to understand how collapse happens so suddenly.

    This is the situation we face. To address Jeff's point, collapse is always, ultimately, a question of investment. Infrastructural problems push us closer to that point, but in the end, collapse is always caused by whatever it is that convinces a sufficient threshold of society that further investment in complexity will no longer produce a sufficient return. Like a run on a stock, the more people stop investing in complexity, the less attractive investment becomes, and the more people will stop investing in complexity, until no one is willing to ivnest in any more complexity, and collapse has run its course.

    In the coming years, we face major crises, any one of which may prove insurmountable, all reaching a head in the same, short time frame of 2012-2015. It is difficult to even imagine a scenario under which further investment in complexity will be an attractive option to anyone, even as soon as 2020. Under these circumstances, what other possibilities are there?

    ov,

    I'm not an astrologer, but the coincidence of the Maya calendar is slightly unsettling. I'm not going to delve into ancient prophecies, since prophecies only ever make sense in hindsight, I simply took note of it as an interesting conclusion–not because it should be a consideration in any actual analysis.

    Comment by Jason Godesky — 23 February 2006 @ 10:26 AM

20. "The ninth cycle is only 260 days long, but will still experience the same amount of change as each of the other cycles."

    So if the 10th cycle is a little under a week, and the 11th cycle is just about 16 hours long, the 12th cycle will be roughly 45 minues long, the 13th cycle will be a bit over 2.5 minutes long, the 14th cycle will be about 15 seconds, and the 15th cycle will be just over 4/5ths of a second, and…

    Holy fuck-grabbins. That's a lot of change.

    Is it ever stated exactly where the cycles of change END?

    - Chuck

    Comment by Chuck — 23 February 2006 @ 1:03 PM

21. **The Singularity!**

Jason Godesky — 23 Feb 2006 @ 1:06 PM

22. How can a decline coincide with exponential growth?

The period you describe, from 1914 all the way to the 1970s was a period when our energy consumption and all its correlates grew exponentially. Was the US Civil War of 1861 a sign of decline? It freed the slaves and turned most of them into share-croppers.
Weren't colonies of European Empires freed in the same way?
If people stop investing, what exactly are they going to do next?
Will the surviving pockets of civilization be still constrained by MAD doctrine? Many of them will retain some long-range weapons with highly destructive power.
Genetic modification of staple crops may provide the cereals with better resilience and enable agriculture with GM plants to continue even as climate changes. Similarly, genetically modified bacteria may provide proteins.
If pockets of civilizations survive, and some of them are big enough to be able to concentrate on the most fruitful least mature remaining branches of research (perhaps biotechnology), it is not clear that you will be safe from them.

Comment by _Gi — 23 February 2006 @ 1:20 PM

23. > The period you describe, from 1914 all the way to the 1970s was a period when our energy consumption and all its correlates grew exponentially.

As we saw in thesis #15, agricultural production has been past the point of diminishing returns forever, the marginal returns for sociopolitical control was already in decline between 1914 and 1967, the marginal returns on technological innovation peaked in the 1800s, and, as quoted from Tainter in that article, "while U.S. per capita product increased 75 percent from 1950 to 1977, weekly work hours declined by only 9.5 percent."

At the same time, we can point to any number of statistics from the Late Roman Empire that would seem to indicate growth, as well, but diminishing marginal returns is a different question from that of absolute productivity.

> If people stop investing, what exactly are they going to do next?

Take a look at any of the previous collapses that have occurred. That's what will happen next. Every solution need not necessarily be met by an increase in complexity; other problem-solving strategies do exist.

> If pockets of civilizations survive, and some of them are big enough to be able to concentrate on the most fruitful least mature remaining branches of research (perhaps biotechnology), it is not clear that you will be safe from them.

Pockets of civilization are not capable of exerting economies of scale, because they're pockets. They will no longer have dominion to import their energy needs from any place they like, so they won't be able to maintain that level of technological complexity. Their resources will be insufficient even to "tread water," as it were, much less "push the envelope." The pockets in question will be less *Blade Runner*, and more *Mad Max*.

Comment by Jason Godesky — 23 February 2006 @ 2:35 PM

24. "The Singularity!"

I would like it to be known by all that I physically fell out of my chair laughing when I read this response.

- Chuck

Comment by Chuck — 23 February 2006 @ 3:10 PM

25. If you walk for a week away from Thunderdome, you will not be safe mostly because no one can walk away alone.
Your prescription for evading a pocket of civilization is suicidal for almost anyone who accepts it as an individual. Only a tribe can walk away from Thunderdome and live. And if you want to know what happens when a whole tribe decides to leave the kingdom, you should probably re-read Exodus.

Comment by _Gi — 23 February 2006 @ 3:16 PM

26. Please, not faith in GE to save us.
If you look into the GE thing you'll find that there is not a single invention that works properly. There is massive propaganda to the contrary but it is just that - propaganda. The reason for this is simple, the scientists know very little about how genetics work. They know enough to force some results but there are always unintended side effects.

We should actually be very worried about GE - the bumbling approach of corporate scinetists has the potential to wipe out all life on earth. And I am not exaggerating.

Try http://www.gmwatch.org or http://www.i-sis.org.uk for further info if you doubt me

Comment by Aaron — 23 February 2006 @ 3:35 PM

...g away from thunde... night watches so the Leather char... a slave.

Comment by Bubba — 23 February 2006 @ 4:23 PM

28. Why is it suicidal for someone who walks away alone? I mean, exactly how is it impossible?

    Comment by planetwarming — 23 February 2006 @ 8:20 PM

29. I am still scared of the Iran oil bourse. I have read elsewhere on the internet saying "Beware the Ides of March." If the dollar being the only currency traded for oil wasn't important, then why did we go to war over it? Why is the Federal Reserve not showing how much money they print in March? And if the US believes that it needs to stop this bourse, Iran can simply sink a few tankers in the Strait of Hormuz and I think I read that they set up tankers there preventing any oil from getting out of the Middle East which would cause a global depression I think I read. And this timeline also underestimates the elite's wanting to continue their power and having a strategy- demand destruction, as I have read theories like this from places like From the Wilderness.

    Comment by planetwarming — 23 February 2006 @ 9:20 PM

30. Most people even those with good survival skills become very depressed alone in months. People need other people sometimes. Additionally, if one intends to feed oneself with what one hunts, one will not eat every day no matter how good a hunter. People who don't eat every day are not happy people or healthy people. Accidents happen during the normal course of life, and for a soft city-state dweller accidents and illness in the wilderness are to be expected. If nobody is around to help one when one cannot move, one dies. If one is immobilized or weakened for any reason in the wilderness and nobody is around to help one recover, one most likely dies. A forager tribe of one is doomed. An individual left alone in the wilderness may survive the first winter with proper training, but his chances of living a normal life-span are much less than my chances of winning the lottery twice in the same year. The prisoners spend ten years on our death rows, but no one denies that they are sentenced to death. An individual left alone in the wilderness have a greater chance of dying that a prisoner on death row, and nature's appeal process does not take ten years. So it follows that walking alone into the wilderness without a plan to meet others for mutual help is the same as a death sentence.
    The very famous fictional persona (perhaps based on real events) to survive alone for decades was Robinson Crusoe. Note that he was not a forager, he was a farmer, and his luck was unbelievable. If one wanted to be a farmer, one needn't leave the city state in the first place.

    Comment by _Gi — 23 February 2006 @ 9:22 PM

31. > Please, not faith in GE to save us.
    > If you look into the GE thing you'll find that there is not a single invention that works properly. There is massive propaganda to the contrary but it is just that - propaganda. The reason for this is simple, the scientists know very little about how genetics work. They know enough to force some results but there are always unintended side effects.
    >
    > We should actually be very worried about GE - the bumbling approach of corporate scinetists has the potential to wipe out all life on earth. And I am not exaggerating.

    The main reason I think the biotechnology and genetic engineering will have an unpredictable and perhaps large effect, is precisely because it is an immature branch of technology. As many people observed, immature technologies tend to improve exponentially until the easy stuff is all discovered.
    Witness computer technology which just maturing now.
    If hacking the genes ever becomes as easy as hacking computers, and we are moving in this direction, there is no telling what kind of benefits and horrors will be created. This seems like one wildcard in the collapse calculations which effects are very difficult to predict. Note, that the original message simply questioned the safety of any group anywhere if any leftover state still had the resolution and resources to push this research.

    Comment by _Gi — 23 February 2006 @ 10:07 PM

32. > Why is it suicidal for someone who walks away alone? I mean, exactly how is it impossible?

    Getting out of one of these proto-cities alone, that's certainly do-able. The problem is surviving on one's own. Humans are social animals. Try *Into the Wild* for an account of what happens when humans forget that and try to go solo. Lone wolves die alone.

    Now, getting out of the city, not so hard. Living outside the city, that's where you need a community. So, either escape with a few of your closest friends, or count on hooking up with some band once you get out.

    Comment by Jason Godesky — 24 February 2006 @ 10:21 AM

33. That second might b[illegible] if I do not meet up with the people I want to before it happens. I guess I can try to t[illegible] with to join me, like my coworkers or acquaintances. I don't know how effective that would be bec[illegible] didn't happen all in [illegible] I don't [illegible] if find people. I just wonder if I wo[illegible] I'll be near any of my friends at that time. Hopefully, I will be. I've been travelling around a lot and it's been hard to establish any new long term bonds with anybody new. But I think that will change and I will be able to be where I want this year. I don't want to live alone. I have heard of Into the Wild and what happened to the guy.

    About global warming, I read a book that followed these characters from Neanderthals to the future called Isle of Woman by Piers Anthony. In the different chapters, it advanced a new period of time in history but stuck with the same characters and flowing storyline. At the end, people traded in bullets and no one trusted anyone new because they were liable to kill them and eat them and the Earth was all scorching and desert because of global warming but then they settled down and farmed cockroaches to eat.

    Comment by planetwarming — 24 February 2006 @ 11:26 AM

34. Didn't anyone see "Logan's Run"?

    Comment by sr — 24 February 2006 @ 12:30 PM

35. If one counts on finding a band accepting of a lone former city dweller, one will have to plan on walking much more than one week.

    Comment by _Gi — 24 February 2006 @ 4:26 PM

36. Well, I'm going to do what I can to make sure I'm not alone. I also have to work on getting primitive skills.

    Comment by planetwarming — 24 February 2006 @ 5:04 PM

37. There are many tales of mountain men who survived for years, alone, in the wilderness.

    Then speaking towards the 1914 date, where collapse of this oil-fueled civilization begins, correlates directly with the Federal Reserve Act of 1913. This Act did replace gold as a medium of exchange.

    One should know that investment capital was restricted by how much gold the investor had. But the Act disconnected the medium from gold by allowing an independant Central Bank to expand the money base through credit. This credit is the capital that is responsible for financing wars (not many were willing to risk their capital (gold) on war), and also, all the infrastructure leading towards the overuse of land and resources.

    One the Mad Max comment, did anyone notice how madmaxers obtained food out of that desert as it was? Me thinks the proper movie to refer to is The Postman.

    Comment by Rick Larson — 24 February 2006 @ 11:05 PM

38. Where do you live planetwarming?

    Comment by Rick Larson — 24 February 2006 @ 11:07 PM

39. Like planetwarming, I would actually like to meet up with like-minded people. Anybody in the Boston area??

    Comment by slomo — 25 February 2006 @ 12:21 AM

40. "*The Singularity!*"

    Don't be too quick to dismiss the effects of exponential change. There is still a chance, albeit tiny, that something like the theorised **Singularity** could arrive before our society collapses, or before the technologies that would make The Singularity possible destroy us anyway.

    Comment by Michael — 25 February 2006 @ 1:04 AM

41. I've noticed that people alone on desert islands seem to fair much better psychologically than people surviving alone in mountanous and forested regions. I wonder why this is?

    Anyone here read the story of Tom Neal? His book is online here. For anyone contemplating a life surving alone, or just interested in how someone could survive cut off from civilization, I really recommend reading his story, An Island to Oneself. Its a wonderful tale and tugs at the heart of anyone with a wish to escape.

    Comment by Michael — 25 February 2006 @ 1:19 AM

42. Don't be too quick to dismiss the effects of exponential change.

Oh, exponential char[...]e. Rather, it [...]ject to diminishing returns. The "Singularity" is one of the most facile bits of inanity I've ever come across, not becau[...] [...]hange wouldn't be s[...]ws anyt[...] an exponential curve.

Comment by Jason Godesky — 25 February 2006 @ 2:19 AM

43. "A year and a half ago I encountered a system that was developed by Carl Calleman and Ian Lungold."

    Funny, this system is remarkably similar to Terrence McKenna's fractal timewave theory he developed in the 70's. The really strange thing is that McKenna developed this theory and chose Dec. 22, 2012 as the date when the rate of change was infinite before he ever heard of the Mayan calendar (so he claims at least, and to his credit "The Invisible Landscape" makes no mention of the Maya).
    The only real difference is that his theory didn't really divide the timeline into 9 periods, but rather a fractal continuum converging on the date 2012.

    btw, he originally developed his theory as an interpretation or mathematical extrapolation of the King Wen sequence of the I Ching. (I think DMT and Psylocybin played a large role in the inspiration too)

    I wonder if the researchers you mention were inspired by his works. If they came to the same conclusions completely independently, it would make them that much more convincing, but it seems unlikely that serious researchers would be unaware of McKenna's work.

    I'm not saying I buy the theory, but it seems a lot more convincing now then when I first heard it.

    Comment by limukala — 25 February 2006 @ 3:51 AM

44. Oh, and for the record, I always assumed the exponential change was more cultural than anything.

    Comment by limukala — 25 February 2006 @ 3:52 AM

45. *I'm not saying I buy the theory, but it seems a lot more convincing now then when I first heard it.*

    I buy into it less than I did 4 or 5 years ago. Mostly because (1) I spent some time trying to understand the methodology and I could not make heads or tails of it [I'll add that I'm well-trained mathematically, so this is at least a failure of McKenna's writings to communicate the methods]; and (2) I've read recently a personal anecdote that McKenna didn't completely believe it himself, but that the sales of his software "payed the bills" [still trying to remember the forum on which I read that].

    It's only when I read articles like this one at Anthropik that I think there is something to the 2012 thing after all.

    Comment by slomo — 25 February 2006 @ 10:55 AM

46. Numerology and astrology "work" primarily because of the Forer effect. They're poor means of making accurate predictions, and probably mean nothing at all. The only time I take any note of them at all is when I come to an analysis by wholly other, more reliable means, and note a coincidence–even then, it's noted under "huh, that's interesting," not as further supporting evidence.

    Comment by Jason Godesky — 25 February 2006 @ 1:08 PM

47. Interesting headline: Russian Scientists Fear SuperNova Event.

    http://www.whatdoesitmean.com/index881.htm

    Comment by Rick Larson — 25 February 2006 @ 2:22 PM

48. *Numerology and astrology "work" primarily because of the Forer effect.*

    That would be true for personality readings, but I've known some talented astrologers (to be distinguished from those that are little better than 12-category newspaper daily reading) who made eerily accurate predictions. I'm on the fence about whether this it any real practical use, but I'm convinced there is something there.

    That said, I'm a firm believer in separating science from parapsychology in all of its guises. I agree that the Mayan calendar or McKenna's timewave theory has no place in the kind of argument you're trying to develop here, even if either or both are valid in their own right.

    Comment by slomo — 25 February 2006 @ 3:29 PM

49. Gi wrote

"The main reason I t[illegible] is [illegible] because it is an immature branch of technology.
The part of the DNA that they wo[illegible] DNA. [illegible]st they don't have a clue about. They call it Junk DNA because, hey, if scientists don't understand it, it must be no good for anything. I doubt that we have the time to figure it all out before an apocalypse of one kind or another arrives

Comment by Aaron — 25 February 2006 @ 3:35 PM

50. Aaron,
your understanding of DNA is flawed.
All DNA consists of 4 bases, including the so-called "junk" part
However, as far as we know at the moment only roughly 2% of HUMAN DNA is coding for genes which are actually read by cells.
The rest of the human DNA is not transcribed, and appears to be unused by human cells at present.
The difficulty in determining what junk DNA does lies in the way biologists determine what any part of DNA does. The way they do it is change a part they are interested in, and see what effect the change makes. Since changing the junk portions produces no effect, all they can say is that it does nothing or that they have no clue about its purpose.

Comment by _Gi — 25 February 2006 @ 5:49 PM

51. "Interesting headline: Russian Scientists Fear SuperNova Event."

What a stupid website. The supernova was 440 million lightyears away and, while in cosmic terms, that is quite close to us (only several galaxies away), I wouldn't be worrying about it destroying the Earth just yet. If you want something closer to home to be scared about, worry about the supermassive black hole at the centre of our galaxy in the region of Sagittarius A* only 28,000 light years away.

Comment by Michael — 26 February 2006 @ 3:39 AM

52. *What a stupid website. The supernova was 440 million lightyears away and, while in cosmic terms, that is quite close to us (only several galaxies away), I wouldn't be worrying about it destroying the Earth just yet.*

Yeah, but if we're seeing the supernova *now*, that would mean its effects are imminent, even if the supernova actually happened 440 million years ago.

Though I won't argue about stupidity of Sorcha Faal's website.

Comment by slomo — 26 February 2006 @ 11:10 AM

53. Gi wrote:

"your understanding of DNA is flawed."
Sorry you're right - I was trying to recall something I had read a while back. However the opint still remains that they don't know what most of the DNA is for. It might be believable that the rest was just junk except for the fact that they keep screwing up - and except for the fact that they are operating according to Crick's Law which says one gene codes for one chracteristic. It was a nice idea but it was rather blown out of the water when the human genome project came back with only 30,000 genes for 100,000 chracteristics. Maybe the junk does something after all.

EVEN IF they did perfectly understand how DNA works it still wouldn't matter because their gene insertion techniques are so crude that they have no control over where the gene lands so there is no telling what disruption is will cause to the host DNA.

My point is that biotech is in it's infancy and shouldn't be allowed out of the lab for several decades probably.

Comment by Aaron — 26 February 2006 @ 3:56 PM

54. *EVEN IF they did perfectly understand how DNA works it still wouldn't matter because their gene insertion techniques are so crude that they have no control over where the gene lands so there is no telling what disruption is will cause to the host DNA.*

State-of-the-art genome science makes use of lots of techniques beyond gene insertion. I agree, much is unknown, but techniques now span a very broad spectrum ranging from genotyping, through gene expression arrays, up through proteomic techniques and now "metabalomics".

Comment by slomo — 26 February 2006 @ 4:02 PM

55. Many would think this website as stupid…

Comment by Rick Larson — 26 February 2006 @ 6:10 PM

56. *Many would think th[illegible]*

[illegible]ut at least here the sk[illegible]ss th[illegible]

It always seems like with Sorcha, the apocalypse will be arriving next week, as a result of some discovery by Rus[illegible] Chinese scientists that can't be verified anywhere else. It feels like the only r'aison d'etre for her (his?) website is to spread fear and panic.

Comment by slomo — 26 February 2006 @ 11:08 PM

57. On the other hand, I was explaining this website to a friend, and mentioned that Jason is planning on compiling much of this stuff into a book. His response: "Well, if the world is ending in a few years, what's the point of publishing a book?"

    Good point. Jason?

    Comment by slomo — 26 February 2006 @ 11:10 PM

58. **"The Singularity!"**

    this is what happens when you miss a couple of days…still chuckling Jason.

    so many topics. first, while I am sure many of you understand exponential change and some calculus, I cannot recommend Dr. Albert Bartlett's discussion of doubling time/change over time. I think it has been mentioned here before, but give it a watch:

    http://www.globalpublicmedia.com/lectures/461

    All of this discussion of different forms of "wisdom" (the Maya and their calendar, astrology, tarot, numerology..) harkens me back to a discussion I had with a div school professor (teaching my comparative religion class my soph year so long long ago):

    "Goosey, you have to understand that every system of belief and divination has wisdom and insight in it. The problem is that, well, most of the time, the wisdom and insight has to travel via the telephone effect to get to you; it gets corrupted, used…remember this, in this day and age, and especially as your future speeds up, you're going to be much better off finding your own direct experience and wisdom than listening to someone else's."

    That man kicked me in my 19 year old intellectual nuts that day…and I haven't been the same since. Bless him.

    Comment by Prof. Goose (TOD) — 27 February 2006 @ 2:45 AM

59. > Good point. Jason?

    If the shit hits the fan in the timeframe of 2012-2015, then that means I still have six years in which to get the word out as much as possible. It's the best I can do to help as many people as possible to survive. I don't think the problem will be too many people competing for resources, but too few people who ever even imagine the idea of not remaining civilized.

    > Goosey, you have to understand that every system of belief and divination has wisdom and insight in it. The problem is that, well, most of the time, the wisdom and insight has to travel via the telephone effect to get to you; it gets corrupted, used…remember this, in this day and age, and especially as your future speeds up, you're going to be much better off finding your own direct experience and wisdom than listening to someone else's.

    Brilliant … couldn't have said it any better myself.

    It's interesting to note the coincidences, but whatever wisdom was in it originally is far too garbled to be of any direct use now. Still interesting to note the coincidence, and it does make you pause for a moment (which is probably always a good exercise), but we shouldn't take it any further than that.

    Comment by Jason Godesky — 27 February 2006 @ 10:26 AM

60. > If one counts on finding a band accepting of a lone former city dweller, one will have to plan on walking much more than one week.

    I've been considering this comment and my initial response is that if a band is planning on refusing every lone person that finds them and wishes to join then that band's survival is going to be at risk as well. It seems to me that a more effective approach would be to accept a small number of outsiders, teach them, and send them off to their own territories. This would allow you to have connections with other bands when times are lean for you and to encourage intermarriage to help keep the gene pool clean.

    JimFive

Comment by JimFive — 27 February 2006 @ 1:03 PM

[illegible] JimFive. If I and wh[illegible] them for a few days and then app[illegible] to be accepted. They are more dangerous and thus far more likely to simply be avoided.

Comment by ChandraShakti — 28 February 2006 @ 2:39 PM

62. My plan was always to be able to produce far more food than me or my peers needed for survival. After all, it is better to be able to feed starving refugees than simply fend them off. The former creates allies and strengthens your position, while the latter only creates enemies and potentially devastating conflict down the road when the resentful survivors regroup. (btw, I'll be on an island, so the prospects for pure foraging aren't as great and don't really make sense, especially on incredibly fertile, fresh volcanic soil, high enough in elevation to hopefully counteract global warming induced heatwaves and drought)

    Oh, and also, I never got into the timewave theory, I just thought it was really interesting that the other site mentioned seemed so similar. I especially thought it was interesting that McKenna chose Dec. 22, 2012 as the enddate for his calculations BEFORE learning of the Mayan Calendar (unless or course he was lying). I also think the Hopi prophecies and others like it are interesting, but as far as practical application, none of them really seem very useful.

    What would be really nice is if someone could give me a detailed world climate map describing ocean levels, temperature and precipitation over the next 50 years or so, along with a detailed economic analysis for the next 10 (I hate to by property now if the values are dropping, but if we are about to enter into some hyperinflation, I'd really like to get a massive mortgage right now), so that I could efficiently prepare myself for what is to come. Anyone?

    Comment by limukala — 1 March 2006 @ 7:28 AM

63. > My plan was always to be able to produce far more food than me or my peers needed for survival.

    Then you plan your own undoing. If you are able to control your food supply, then you will always choose to increase it, rather than suffer the occasional downturns and harder times required of a sustainable society in dynamic equilibrium with its ecology. You enter a self-reinforcing feedback loop, the anabolic growth cycle discussed in thesis #12 and thesis #13.

    More importantly, why did all the world's food-producing societies appear at the same time, and why did none of them appear significantly before? Because food production is only possible in a Holocene ecology. Food production is incredibly tenuous (thesis #9), and requires very specific conditions. No matter which way global warming goes, the Holocene is over–those conditions will not last much longer. Food production will not be possible–not even on rich volcanic soil.

    > I'll be on an island, so the prospects for pure foraging aren't as great and don't really make sense

    Most of the world's surviving foragers live (thrive) on islands. When the tsunami wiped out all those agriculturalists at the end of 2004, it was the foragers of the Andaman islands that survived–unscathed. So, considering that foragers do better on islands than food producers do, I'm not sure what you mean by that.

    > What would be really nice is if someone could give me a detailed world climate map describing ocean levels, temperature and precipitation over the next 50 years or so

    I don't think such a map is possible.

    Comment by Jason Godesky — 1 March 2006 @ 4:28 PM

64. "Food production will not be possible–not even on rich volcanic soil."

    Never been to Hawaii have you. You seem stuck with grain here, without considering healthy forest farming, or other forms of horticulture. Regardless of which way global warming goes, the tropics will be ideal for growing many kinds of trees and root crops, especially at the elevation I will be at (2000 ft). Also, my livestock probably won't care if the conditions for raising grain aren't perfect.

    "Then you plan your own undoing. If you are able to control your food supply, then you will always choose to increase it, rather than suffer the occasional downturns and harder times required of a sustainable society in dynamic equilibrium with its ecology. You enter a self-reinforcing feedback loop, the anabolic growth cycle discussed in thesis #12 and thesis #13."

    Once again you are completely ignorant of island culture. The fact is that horticultural societies in the pacific lived in great balance, precisely because the resource base was so limited that any imbalance quickly led to ill effects. They had strict population control measures and were very good about leaving all of the upland forests undisturbed. They knew that if you fucked with the watershed, some serious problems would arise. Whatever you want to say about people never being able to act intelligently as a collective whole, the fact is it happened for 1000s of years. In fact, island cultures are probably the best place to research sustainable living practices, precisely because there is so little room for error. The occasional exceptions,

such as Easter Island [illegible] a new island, but that is part of the learning process most likely, and our hunter-gatherer ancestors certainly did the same (australia or north america saw m[illegible]

Also, tropical climates will be least effected by global warming, especially those surrounded by the buffering effect of the ocean.

Also, I never said it isn't possible to forage on an island, it just isn't practical. It doesn't feed as many people, and people like to live on islands, so am I supposed to decide who to kill off so that I can forage in peace? It makes far more sense to plant a lot of trees and produce food so that more people can enjoy the beautiful tropical life. Besides that, a foraging culture isn't going to last too long in the pacific. There are plenty of warlike horticulturalists that would quickly take over any sparsely populated islands they found, and most likely not treat the population too kindly. Probably wouldn't happen for a while after collapse (on the order of centuries), but I like to look out for my descendants too.

"I don't think such a map is possible"

I'm pretty sure I was joking, and I thought it would be obvious.

Comment by limukala — 1 March 2006 @ 5:28 PM

65. You seem stuck with grain here, without considering healthy forest farming, or other forms of horticulture.

No, never had the pleasure of visiting Hawai'i, but if forest gardens are possible with any sea level, with any global temperature … why did food production only begin in Polynesia with the dawn of the Holocene? Why did they "figure it out" at the exact same time as everyone else across the world, without contact between them, and not before?

My guess–and the archaeological concensus–is that it was only then that food production became possible. Not just grains, but forest gardens, horticulture and permaculture as well. Modifying your environment is one thing; doing it to the extent that you can claim to "control" your food supply is quite another.

> Once again you are completely ignorant of island culture. The fact is that horticultural societies in the pacific lived in great balance, precisely because the resource base was so limited that any imbalance quickly led to ill effects.

I admit, I've never had the pleasure of visiting the Pacific myself. Instead, I've only studied them, such as the kingdoms of Polynesia–some of the most ruthless, expansionistic kingdoms to ever exist on the earth. The domesticates used by island cultures are typically hard to scale, so their eventual failure in world conquest was kind of easy to foresee, but the Polynesian food producers were some of the most militaristic, expansionistic, ruthless conquerors the world has ever seen, responsible for innumerable genocides and ecological atrocities throughout the Pacific, some of the worst the human race has ever caused prior to the twentieth century.

> They had strict population control measures and were very good about leaving all of the upland forests undisturbed.

I assume you're referring here to such cultures as Tikopia? That was a very inspiring exception to the general rule of the Pacific kingdoms, I'll readily admit. But they were still an exception.

> Whatever you want to say about people never being able to act intelligently as a collective whole, the fact is it happened for 1000s of years.

The fact is, it didn't. The reason Tikopia is so exceptional is because they were reacting to their own former destruction. Their previous way of life nearly wiped them out. Like so many other sustainable societies, they discovered it only after their previous unsustainability had pushed them to the brink of annihilation.

> es, people usually caused a few extinctions when they arrived at a new island, but that is part of the learning process most likely, and our hunter-gatherer ancestors certainly did the same (australia or north america saw most large game go extinct at the same time people arrived).

Errr .. not really. See, "Overkill, Overchill and Human Nature."

> Also, tropical climates will be least effected by global warming, especially those surrounded by the buffering effect of the ocean.

That's a conclusion reached only because of instrument error. I'm expecting a thick girdle around the earth where it's too hot for much of anything to exist–just a searing desert where the tropics used to be.

> … it just isn't practical.

How can we label a way of life "impractical" if it's been practiced successfully for millions of years?

> How can we deem th[...] the more "practical" alternative is the one that's brought us to the brink of extinction in ju[...] w millennia?
>
> It doesn't feed as many pe[...] o kill [...] so that I can forage in peace?

Well, to follow in the tradition of other Pacific food producers like the Maori, you could just slaughter all the foragers who get in the way of your constant expansion–like the Moriori.

> Besides that, a foraging culture isn't going to last too long in the pacific.

And that's why the Andaman islanders never lasted more than few centuries. Oh, wait, they've been there for what, 40,000 years?

> There are plenty of warlike horticulturalists that would quickly take over any sparsely populated islands they found, and most likely not treat the population too kindly.

Indeed they did not, but it takes more than just soil to control your food supply. You need the right precipitation, the right climate, the right *everything*. The Holocene was the first time it all came together, and it won't happen again for quite some time to come.

Comment by Jason Godesky — 1 March 2006 @ 6:12 PM

66. "why did food production only begin in Polynesia with the dawn of the Holocene? Why did they "figure it out" at the exact same time as everyone else across the world, without contact between them, and not before"

Probably because there were no people in Polynesia prior to the holocene.

"Polynesian food producers were some of the most militaristic, expansionistic, ruthless conquerors the world has ever seen, responsible for innumerable genocides and ecological atrocities throughout the Pacific, some of the worst the human race has ever caused prior to the twentieth century."

I never said they weren't conquerors, just that they lived in harmony with their environment, and sorry buddy, Hawaii included. They didn't destroy the forests until Europeans and Chinese came and encouraged the sandalwood trade. They managed to live in harmony for at least a couple thousand years before that. Not only that, but along with the warrior culture, Hawaii had one of the most open and loving cultures that has ever existed. Ever heard of Makahiki? If not look it up. Look up the true definition of aloha too.

"Errr .. not really. See, "Overkill, Overchill and Human Nature.""

Once again your claiming factual status for a contentious theory. Even if the N. American animals weren't killed by humans, (and I doubt the stress of a new efficient hunter didn't have an effect, especially on an already stressed population) there were other areas that large animals went extinct that don't match up chronologically with "overchill", case in point, australia. Unless of course you think that the overchill happened at points in time separated by 30,000 years that just happen to be exactly when humans showed up.

"That's a conclusion reached only because of instrument error. I'm expecting a thick girdle around the earth where it's too hot for much of anything to exist–just a searing desert where the tropics used to be."

Glad to know you are such an expert in climate forcast, seeing as how scientists who make this their life's study admit they really don't know jack shit when it comes to global climate systems (oh, didn't think of that feedback loop, etc). Yes, lovelock theorizes this, but then he also thinks that humanity will be reduced to a few breeding pairs in Antarctica. The fact is nobody really understands global climate systems, and anybody who does is either guessing, trying to scare you, or blowing smoke out his ass.

Even if this happens, how can you predict the timeframe. I would wager my life that you have not done independent research, but are only parroting the conclusions other people have reached, and therefore you have chosen to believe the conclusions that suit your worldview the best. There are plenty of differing opinions however, and I doubt you are really a qualified judge of which are the most valid. Or does anthropology now include several years of climatology in the curriculum?

"How can we label a way of life "impractical" if it's been practiced successfully for millions of years?"

Come on man, follow the logic through here. In one sentence you say that pacific cultures are ruthless and expansionistic, and in another you claim that foraging would work long term in the pacific. It would only work until the Samoans try to invade, unless you have enough warriors to keep them out.

"Well, to follow in the tradition of other Pacific food producers like the Maori, you could just slaughter all the foragers who get in the way of your constant expansion–like the Moriori"

Then how come South Island Maori were hunter-gatherers with remarkably little warfare? [illegible] a foraging culture isn't going to last too long in the pacific.

And that's why the Andaman islanders never lasted more than tow centuries. Oh, wait, they've been there for who knows how many 00 years?"

I think I already covered this, but lets make it ultra-clear, foraging doesn't work when horticulturalists come knocking. If the andaman islanders had samoans next door, they would either be dead or farming.

"How can we deem that the more "practical" alternative is the one that's brought us to the brink of extinction in just a few millennia?"

You may have "studied" pacific cultures, but I doubt you have studied them near as much as me, since I had over a year of Hawaiian and Pacific Island Studies at UH, and I promise you, whatever there warlike status, many pacific cultures were amazing models of harmonious living in balance with nature. Not only that, I have lived there for years and am familiar with the inhabitants.

"Indeed they did not, but it takes more than just soil to control your food supply. You need the right precipitation, the right climate, the right everything. The Holocene was the first time it all came together, and it won't happen again for quite some time to come. "

Well, shit, if it comes down too it I can always fall back on horticulture, but in the meantime I will have some food. Besides that, tropical species have been evolving on Hawaii for millions of years, far longer than the holocene. Since the food plants I will be growing thrive in the same conditions the native plants of Hawaii evolved in, I have good reason to believe they will continue to do so regardless of the global climate. Worst case scenario I have to move farther up the mountain (there are 13,000+ feet to work with). The rotation of the earth ensures tradewinds to my side of the island, and the mountain ensures plenty of rain will drop. Warmer oceans would only make it more plentiful. All in all I don't foresee problems with my trees and livestock, and if they can't survive then none of the wild animals and plants on the island will either, so what difference does it make?

One last thing, you seem to like to contradict yourself, in one sentence you will say that foragers never go hungry, then you will say stuff like:

"If you are able to control your food supply, then you will always choose to increase it, rather than suffer the occasional downturns and harder times required of a sustainable society in dynamic equilibrium with its ecology"

So, they have downturns, but they don't go hungry? I think it is a safer bet that foragers DO fast from time to time (but that is another thread).

Comment by limukala — 1 March 2006 @ 7:31 PM

67. Probably because there were no people in Polynesia prior to the holocene.

By 50,000 years ago, the first humans had made it all the way to Australia. Melanesia was populated long before, by *H. erectus*. While it's true that the first Polynesians appear only 3kya, there have been humans living on islands in the Pacific since *H. erectus* and "Java man." Yet they, too, only began to produce their own food in the past 10,000 years, with the beginning of the Holocene–just like people in Mesoamerica, China, and the Middle East.

> They didn't destroy the forests until Europeans and Chinese came and encouraged the sandalwood trade.

Easter Island wasn't such a limited phenomenon. The same thing happened at Pitcairn, for example. Most of the extinctions caused by human settlement prior to the twentieth century were caused by Polynesians. These were not "noble savages" that shared some special relationship with the earth.

> Not only that, but along with the warrior culture, Hawaii had one of the most open and loving cultures that has ever existed. Ever heard of Makahiki? If not look it up. Look up the true definition of aloha too.

What is the metric we use to compare how "loving" two societies are? I'm familiar with both Makahiki and aloha–I never would've passed Intro to Cultural Anthro if I didn't–but I can also point to similar concepts in *any* culture. So what? No culture is entirely good *or* bad. You seem to be romanticizing the Pacific cultures *a lot*, and maybe that's because you identify yourself with them. But it's crucial to be able to distinguish both the good *and* the bad about your own culture, otherwise … well, let's just say "bad things happen."

> Once again your claiming factual status for a contentious theory.

No, that's what *you* were doing. Personally, I'm on my side of the argument. If there's any concensus on the debate, frankly, it tends more towards my side: a more balanced view where both elements have their role to play. In fact, you'll note that one of my primary arguments was how the side we take up in that debate more often has more to do with our

notions of "human nature." But I wasn't citing that article to prove one side or the other conclusively, but rather, [illegible] assertion of fact was unwarranted. Specifically, you claimed, "australia of north america saw most [illegible] the same time peopl[illegible] most of [illegible] American extinctions occurred at [illegible] arrived" at all, but a good 10,000 years prior. That *is* a fact.

> Unless of course you think that the overchill happened at points in time separated by 30,000 years that just happen to be exactly when humans showed up.

Did you *read* the article? My argument is that humans tipped the balance in a precarious situation, just like any new alpha predator would. I agree with your basic outline of the situation. But I also talked about the climate change that was the cause of *both* results. It's hardly a coincidence: it was the climate change that destabilized so many populations, *and* altered the coastlines and sea level so as to make it easier for humans to reach these areas. It's not a coincidence; humans first reached these places *because of* changes in global climate!

> Glad to know you are such an expert in climate forcast, seeing as how scientists who make this their life's study admit they really don't know jack shit when it comes to global climate systems (oh, didn't think of that feedback loop, etc).

I didn't assert it as fact; my precise words were, "I'm expecting." That indicates belief, not certainty. Now, it *is* a fact, as noted in the article I linked to, that the idea that the tropics are less affected by global warming is a product of instrument malfunction. This was a much bally-hoo'ed "anomoly" in global warming, and the discovery that it was instrument error signalled a major shift in our understanding of global warming. As noted in the linked article:

> After examining the satellite data, collected since 1979 by National Oceanic and Atmospheric Administration weather satellites, Carl Mears and Frank Wentz of Remote Sensing Systems in Santa Rosa, Calif., found that the satellites had drifted in orbit, throwing off the timing of temperature measures. Essentially, the satellites were increasingly reporting nighttime temperatures as daytime ones, leading to a false cooling trend. The team also found a math error in the calculations. …
>
> Once corrected, the satellite and balloon temperatures align with other surface and upper-atmosphere measures, as well as climate change models, Santer says.

Your emphasis on the uncertainty of climate change is disingenuous, though. While the details are imprecise (like your joke about a detailed map), the rough outline is a very safe bet. There's good reason to believe that my guess will probably turn out correct (not enough to assert it strongly as a prediction, but enough to keep it as a good guess), but if you wanted me to tell you the precise width that equatorial desert would take, there's no way I could do that.

Spend more time at sites like Real Climate, and you'll quickly find out just how egregiously inaccurate an assertion like "nobody really understands global climate systems, and anybody who does is either guessing, trying to scare you, or blowing smoke out his ass," really is.

> I would wager my life that you have not done independent research, but are only parroting the conclusions other people have reached, and therefore you have chosen to believe the conclusions that suit your worldview the best.

I was a devout Catholic. The studies that supported my worldview best were the *least* dire ones. No, I haven't done independent study, but I do read the journals. The ones that have the most evidence are weighted more, but my conclusions are based on the proponderance of them, not whether or not they suit my worldview. Once that was done, my worldview shifted in response. Because of the proponderance of the evidence, I was forced to turn my back on the Church, and a lot of other things that were important to me, personally.

So, I'm sorry, but that argument really doesn't work on someone who sacrificed his worldview–and everything he stood for–because the evidence swayed him.

> Or does anthropology now include several years of climatology in the curriculum?

No, just my own interest.

> Come on man, follow the logic through here. In one sentence you say that pacific cultures are ruthless and expansionistic, and in another you claim that foraging would work long term in the pacific.

I said nothing of the sort. I was counter-balancing your romantic, "noble savage" depiction with a little bit of a reality check to remind everyone that these weren't just a bunch of happy horticulturalists singing kumbaya. They had all the faults and all the merits of any other horticultural society on the planet.

> It would only work until the Samoans try to invade, unless you have enough warriors to keep them out.

Yes … if there are Samoans, and if you're living on land that's useful to them.

Then how come South Island Maori were hunter-gatherers with remarkably little warfare??

[illegible] they got there, they found out [illegible] the Maori were hunter-gatherers because their kind of food production wouldn't work there. They had to [illegible] ed off. "remarkably little warfare" bit is a consequence of that. People fight over scarce resources, and foragers just plain don't suffer from scarcity.

> If the andaman islanders had samoans next door, they would either be dead or farming.

No Samoans, but they did have India next door. It was first named by the Greeks at the height of Alexander's empire. The British used it as a penal colony. They've had *plenty* of contact with food producers. Yet they are still alive, and still not farming.

> …many pacific cultures were amazing models of harmonious living in balance with nature.

Any statement like that sets off all my alarms for romantic, "noble savage" glorification. I think you're glossing over the not-so-great parts and just focusing on the good parts. Unlike me, you *do* have a personal reason to believe this and take a skewed, biased look at the evidence, don't you?

How do we measure how "harmonious" or "in balance with nature" a society is? What's the metric?

> Well, shit, if it comes down too it I can always fall back on horticulture…

Horticulture and permaculture *are* food production. They *also* only appeared with the Holocene.

> Besides that, tropical species have been evolving on Hawaii for millions of years, far longer than the holocene.

Evolution and domestication are very different things. Life will survive just fine; it's just highly unlikely that it will do so in a way that you can still control.

> Since the food plants I will be growing thrive in the same conditions the native plants of Hawaii evolved in, I have good reason to believe they will continue to do so regardless of the global climate.

Perhaps, but they survive by adapting. Those adaptations often mean changing the size of the fruit, migrating their population, or any number of other adaptations which will be very successful in keeping the plant alive, but with the side effect that it becomes useless for food production.

> Worst case scenario I have to move farther up the mountain (there are 13,000+ feet to work with).

No, worst-case scenario, the whole island becomes a lifeless desert, and the ecology basically migrates north to some other island.

> The rotation of the earth ensures tradewinds to my side of the island, and the mountain ensures plenty of rain will drop.

Unless we face major climate change, after which time the tradewinds and the rain patterns are no longer a sure thing.

> …so what difference does it make?

Because there are other islands?

> So, they have downturns, but they don't go hungry? I think it is a safer bet that foragers DO fast from time to time (but that is another thread).

There's two meanings of "go hungry" in English; one refers merely to being hungry, which is something foragers suffer from time to time. Not fasting, but their meals are smaller and less satisfying at some times of the year than others. The other meaning of "go hungry" is to not have any food at all, eventually leading to starvation. That's something foragers *don't* do; that's something only food producers suffer. For foragers, lean periods regulate their population not by massive mortality, but by restricting the birth rate for a while. For food producers, famine tries to regulate their population through massive mortality, but even that usually fails.

Comment by Jason Godesky — 2 March 2006 @ 11:08 AM

68. hmmm

First of all, I never tried to close my eyes to the negatives of polynesian culture, but I would suggest that it is precisely because polynesians caused so much environmental damage that they learned so quickly how to live in balance. In other words, they either already set off an ecological disaster similar to the one experienced now on a global scale, and learned their lesson, or their ancestors did on a different island. They had no choice but to live in harmony. And while pitcairn and

easter island may not [illegible] the profound [illegible]ty [illegible]environments, I would also use them as evidence for the exemplary environmental attitudes of the majo[illegible] Of course, a lot of th[illegible] NOT in [illegible] ac[illegible] Hawaii, are you familiar with the [illegible] and se[illegible]) by making certain fisheries or forests kapu.

Obviously there were plenty of not-so-great things about old Hawaii, but that doesn't change the fact that is was one of the most loving cultures in the world. Yes, I have a "a personal reason to believe this and take a skewed, biased look at the evidence," but I also happen to have direct knowledge of the culture of which we are speaking. So who then is more accurate? It is sort of like the scientists who study psychedelic drugs, who are then grouped into the "have tried it and therefore are no longer objective" and "haven't rried it and therefore have no idea what they are talking about."

I'm not here to keep on arguing about how great Hawaiian culture is though. Obviously anyone who has a feel for it won't need convincing, and anyone else probably isn't going to take my word for it.

"Unless we face major climate change, after which time the tradewinds and the rain patterns are no longer a sure thing."

While there is always a degree of unpredictability, the rotation of the earth means that tradewinds tend to flow NE-SW in the northern hemisphere. Especially in the open ocean. Warmer air would mean more evaporation, which would mean all the more rain squeezed out of the clouds by Mauna Loa. Also, like I said, all that ocean will act as a massive thermal regulator, vastly reducing the worst effects of global warming. All in all I have no qualms about living there.

"Well, shit, if it comes down too it I can always fall back on horticulture"

Oops, I meant to say foraging.

"No, worst-case scenario, the whole island becomes a lifeless desert, and the ecology basically migrates north to some other island."

OK, but I still don't see that as likely. I'm willing to risk it. To me, the benefits far outweigh the risks. To each his own though. I just enjoy tropical climates, so maybe that will be pushed to the extreme. Have there been times when the tropics were lifeless deserts? And if so did that apply equally to extremely isolation archipelagos? I would love to see studies to that effect. Yes, there are other islands, just none that will cut it for me (aloha'aina an all). Especially since my daughter is part Hawaiian. I can't deprive her of her heritage because of that kind of fear. If all life does die on Hawaii, I'll go with it. Most foraging cultures don't have the same kind of irrational fear of death so common to agricultural societies. So I die a little sooner, I still had a great life while it lasted. Concern for the survival of my descendants is simply fear of death masked and projected, except in the case of my daughter, where it is simply a biological and emotional response to love. Of course, you could argue that I would love all my descendants if I new them too, but the fact is that is probably true of almost everybody in the planet (I try not to have a fetish-like attachment to my particular genetics). So if my line becomes extinct, kudos to you, maybe I'll reincarnate as your grandson. Then you can tell me "I told you so." 😉

Comment by limukala — 3 March 2006 @ 5:28 AM

69.

> I would suggest that it is precisely because polynesians caused so much environmental damage that they learned so quickly how to live in balance.

Absolutely. Collapse forces cultures to become sustainable–or face annihilation. That's precisely what happened with the Pueblo, for example.

> So who then is more accurate?

Please don't mistake me; there's a lot I respect about Hawaian culture–particularly the original, Polynesian settlers prior to the Tahitian conquest. But it's dangerous to over-romanticize indigenous cultures, too. I was merely trying to temper your response, which I saw as being a bit on the "noble savage" side.

> While there is always a degree of unpredictability, the rotation of the earth means that tradewinds tend to flow NE-SW in the northern hemisphere.

I was under the impression that winds are more heavily influenced by temperature. While that makes some major winds relatively predictable, because large areas of the earth do not dramatically shift in temperature often, that does suggest that global warming could introduce some massive shifts in the way the major winds blow.

> Oops, I meant to say foraging.

That makes a lot more sense. 😀

> OK, but I still don't see that as likely. I'm willing to risk it. To me, the benefits far outweigh the risks. To each his own though. … So if my line becomes extinct, kudos to you, maybe I'll reincarnate as your grandson. Then you can tell me "I told you so."

If that prospect gave me any joy, I'd never have challenged you to begin with. I agree with your perspective on de d if it was enough to you to face the prospect of dying along with the whole island, then obviously you're connecte e place in a very speci –I V r taken it upon myself to try to help not to those choices for them. I wish you all the luck in the world.

Comment by Jason Godesky — 3 March 2006 @ 11:55 AM

70. erm…
2012, eh? Mebbe I have something mixed up in my brain, but it seems to me that the capitalist system will collapse completely and totally as soon as a critical mass of investors realize that the system's days are numbered.

Now, I understand that you are much brighter than the capitalists, but somehow I think they are figuring things out right about now too, and it's hard for me to see how they could make it through 2006 without a huge collective, oops-we-picked-the-wrong-economic-system.

Sadly, there will be no internet in 2007 to post my, "I told you so" to those who thought the capitalists would hold things together longer.

Live well post-capitalism, brothers and sisters! I have been reading this site for a few months, love it, and will tell my tribe about it around the campfire when this silly capitalist mess is over shortly.

Peace,
Ryvr

Comment by Ryvr — 4 March 2006 @ 3:29 AM

71. This discussion devolved into politically-correct nonsense advocating a failed society (Hawaiian) and socialism (or at least anti-capitalism). I have only contempt for socialists and multi-culturalists. Individual freedom is the most important thing decent people value.

Comment by Mark — 4 March 2006 @ 8:57 PM

72. "Individual freedom is the most important thing decent people value."

LOL — I love circular reasoning.

Comment by Devin — 5 March 2006 @ 4:12 PM

73. Could someone please define for me what the fuck "individual freedom" means anymore? It appears to have deteriorated into something basically as hollow and meaningless as a "I Support Our Troops" bumpersticker.

Comment by . — 5 March 2006 @ 5:06 PM

74. "LOL — I love circular reasoning."

Good catch, Devin! Maybe I'll try one of my own:

It is obvious to intelligent people that contempt for socialists is well-founded.

See? Anyone can do it! Don't agree with me? Obviously, you're not intelligent. Or in Mark's argument, decent.

- Chuck

Comment by Chuck — 5 March 2006 @ 9:29 PM

75. Ryvr — I agree with your basic model of how collapse happens, *but* there's a *lot* of stuff out there to make the situation more ambiguous. I wonder if perhaps Bush isn't pursuing a brilliant course of action meant to postpone collapse as long as possible. For instance, we're at the peak now, but our misadventures in Iraq have created an ambiguous situation for investors. If it was clear that we're at peak, we might see a great deal of investment being withdrawn, but it is not clear at all that that's the problem–most believe it is more temporary problems, stemming from aforementioned misadventures. Likewise, we were able to explain the situation in New Orleans post-Katrina by reference to the Bush administration's ineptitude, creating the illusion that some other administration could have saved the city. This keeps people investing in complexity, because it's not a systemic problem concerning the diminishing returns of our complexity versus the mounting crises we face.

These kinds of actions, to say nothing of sheer momentum and the fact that we're more willing to invest in the basic idea of our civilization than we are into this or that corporation within it, cautions me against too bold a prediction. But I will say this, I think it is far more likely that I have *overstated* the timeline, than understated it.

Mark, I find it interes[illegible] for individ[illegible] freedom since capitalism and ethnocentrism are the most powerful destroyers of individual freedom that the hun[illegible]e accepted. It was precisely b[illegible] that [illegible]v[illegible] si[illegible]y accepted that capitalism is an inc[illegible]

That said, capitalism in its purest sense may not be such a bad thing, as evidenced by the Algonquin. The bad parts about capitalism are shared by all agricultural economies, including feudalism, communism, and yes, socialism, as well. The part that makes all of these systems antithetical to individual freedom is their reliance on agriculture, and as a result, hierarchy, which is by far the most dehumanizing opposite of individual freedom one could ever propose.

Comment by Jason Godesky — 5 March 2006 @ 11:12 PM

76. Jason, I can definitely appreciate that their are some big unknowns… and I'm really waiting for the week of 3/20 to possibly reveal some of them.

    Can you point me to info/references on the Algonquin "benign" capitalism? I am under the impression that capitalism's values and premises lead to inevitable unnecessary suffering.

    I am wondering why Mark is seeing anti-capitalism as a challenge to freedom. Both murder and claiming to "own" the means of production may be immoral acts, but I would like to maximize freedom while advocating against immoral action.

    Comment by Ryvr — 6 March 2006 @ 12:39 AM

77. > Can you point me to info/references on the Algonquin "benign" capitalism? I am under the impression that capitalism's values and premises lead to inevitable unnecessary suffering.

    Peter Farb's *Rise of Man to Civilization* is a good one in general. Don't be fooled by the title, it's a really great volume on Native American cultures all around.

    The basic idea of capitalism–competition between various entities for greater resources in the economy–is certainly sound. It emulates what species do in the real world. Notice the problems that are cited like a litany against capitalism, primarily centering on various incarnations of the inequality of wealth, leading to an oppressed, homogenized and exploited underclass. This is not a feature unique to or necessarily related to the concept of capitalism in its purest form. This is found in all agricultural economies, and as we saw in thesis #8, it is a property of agricultural societies, not the type of economy they happen to practice.

    So, yes, capitalism-as-we-know-it as a pretty awful thing, because it is an agricultural economic system, and *all* agricultural economic systems *must* suffer from the very same thing.

    So, what would a non-agricultural society do with capitalism? That's where things start to get interesting, and we start to see the opportunity open up for a "benign capitalism."

    Comment by Jason Godesky — 6 March 2006 @ 12:51 AM

78. I think you've lost the meaning of the word capitalism somewhere. In order to have capitalism, capital is needed. Capital is surplus by definition, and surplus is only possible due to agriculture

    Comment by Anonymous — 6 March 2006 @ 1:57 AM

79. "So, what would a non-agricultural society do with capitalism? That's where things start to get interesting, and we start to see the opportunity open up for a 'benign capitalism.'"

    Well, I'd love to hear more on how society could make business people stick exclusively to the benign form. Is it possible? Or is it akin to asking a group of athletes to all come across the finish line at the same time so that the the prizes may be distributed equally?

    One of the biggest ever mistakes made by society was in granting corporations the same rights as people while at the same time allowing them to be less accountable for their actions.

    But how do you stuff this evil genie back in the bottle?

    Comment by Peter — 6 March 2006 @ 2:11 AM

80. Capital is involved in all forms of society, in all economies. It is not unique to capitalism. Capitalism arises from the merchants of the Middle Ages, and refers to the economic system whereby various entities compete economically for profits.

    > Could someone please define for me what the fuck "individual freedom" means anymore? It appears to have deteriorated into something basically as hollow and meaningless as a "I Support Our Troops" bumpersticker.

It is certainly true that [illegible] autonomy of ea[illegible] individuals, as occurs [illegible] *Primitive Man as Philosopher*). Capitalism minimizes [illegible] dual [illegible] do all other hierarc[illegible] defend [illegible] lism specifically because of the hierar[illegible] the mos[illegible] autonomy, at the price of even less autonomy for the many. So, for the elite, it's a pretty good deal, and from a completely myopic and selfish point of view, could even be argued to be consonant with a respect for individual freedom.

> Well, I'd love to hear more on how society could make business people stick exclusively to the benign form. Is it possible? Or is it akin to asking a group of athletes to all come across the finish line at the same time so that the the prizes may be distributed equally?

That would never be possible. But in a society where all human beings are ultimately self-sufficient, where society is formed for the mutual benefit of everyone (rather than formed at gun-point for the benefit of the elite), and the most efficient way to prosper is to have a genuine interest in the welfare of your fellow tribesmen (because their well-being *is* your well-being), then economic competition could be viable. Imagine a world full of Quinn's model of "occupational tribes." That just might work, if all were sufficient blended with enough primitivism to be self-sufficient, as well. Like the Upper Paleolithic Revolution, that might represent a higher, sustainable level of complexity. In such a scenario, it's conceivable that free and fair trade may actually mean what they appear to mean, rather than being euphemisms for something else entirely.

> One of the biggest ever mistakes made by society was in granting corporations the same rights as people while at the same time allowing them to be less accountable for their actions. But how do you stuff this evil genie back in the bottle?

First and foremost, by making governments and their legal systems obsolete.

Comment by Jason Godesky — 6 March 2006 @ 10:41 AM

81. I find it interesting when others reach the same conclusion based on entirely different evidence, as should be evident from my brief speculation on the Maya. I fear re-sparking a discusson of astrology, but this bit from Bill Herbst's March newsletter is too much to pass by unremarked:

    > In balance, however, I do not currently believe that we will see the dark descent of Orwellian-style fascism, for the simple reason that events are likely to spiral out of control. All our complex systems—from the military through the political to the corporate—are already showing signs of stress and disintegration, much to the chagrin of those who wish to maintain the status quo. Few outright institutional collapses have yet occurred, but those will accelerate after 2008, reaching full-bore in 2012-2015.

    Comment by Jason Godesky — 7 March 2006 @ 3:17 PM

82. Devin,

    I'd be delighted to see the material you wrote at IshCon about my paper "How Civilizations Fall." The catabolic collapse theory is very much a work in progress at this point, and constructive criticism has been hard to come by. If you'd be willing to drop me a note at jmg (at) aoda.org that would be welcome.

    You're correct, of course, that I didn't offer a timeline of collapse in the paper. That was partly because the historical cases move at different rates, and partly because there are awkward issues of definition involved — when does a society count as "collapsed"? It can take a long time for the last pockets to go under, and in some historical cases those "pockets" can be pretty sizeable; Byzantium comes to mind.

    In the present case, most of the Great Plains are already in full-scale catabolic collapse, ditto parts of the Rust Belt, and of course New Orleans and much of coastal Mississippi also count. Most of the interior of the continent is likely to follow suit over the next decade or so, but some areas in the Northeast and the coastal West might be viable as independent enclaves, and maintain shrunken urban centers and something like 19th century technology for quite a while yet. But I suspect the next decade will see some severe shocks, and getting through those will likely be a challenge for all of us.

    Comment by John Michael Greer — 15 March 2006 @ 4:24 PM

83. I thought you and I would disagree more, after reading "The Long Road Down," but it looks like we differ more in a matter of perspective. It seems like I'm arguing that hegemony will be broken quickly, though hangers-on may persist for some time, while you're saying, hangers-on wll persist for some time. I suppose it all depends on whether you're looking from the perspective of someone who escapes civilization and thrives in the space opened up, or somebody still in one of those remaining pockets.

    Comment by Jason Godesky — 17 March 2006 @ 10:46 AM

84. Hey folks, I just had a friend draw my attention to this site — lots of good things being said. Interesting to see how this understanding of the world seems to be taking off as people wake up to it, and I'm glad to see it all being laid out here so

clearly and comprehensively. This is now the place I'll be refering people to for all the supporting details I don't [illegible] take time to go over and over again.

One thing I wanted to touch on f[illegible] his poi[illegible] not quite hitting it as squarely as I think it deserves) is that from my perspective, the two most important factors leading to collapse are;

1. Future instablility of climate (based on information on Paleo-climate such as that coming from Richard B. Alley). The issue as I see it is not so much global warming (or cooling), but rather instability. Agriculture can work in hot climates or cold, but not in unpredictable climates (thats why calendrics are so important to farming cultures).

2. Coupled with the precarity of genetic manipulation in the service of mono-crop farming practices (Noted by Al Gore in his mostly mediocre book "Earth in the Balance"). Endangered species lacking genetic diversity cannot adapt to unstable environemnts.

Here's an excerpt from an article I wrote awhile back that touches on this (the whole thing can be read at http://p073.ezboard.com/fcacstfrm1.showMessage?topicID=317.topic):

I believe the signs of the times are that wildness is getting ready to return BIG TIME and IN FORCE. The Mayan calendar indicates that the age of corn will come to an end in 2012. What is the age of corn in the Mayan version of history? The age of corn is the age in which the Mayans live by agriculture–cultivating their primary food source, which is maize. What could bring an end to the age of Mayan agriculture? Two words–climate change. The Mayans have already experienced significant civilized collapse due to climate change–the end of their classical period of powerful kings and city-state building collapsed during one of the more significant abnormalities in the climate record of the last 10,000 years. It would stand to reason then, that the old Mayan sages may have had particularly good insight into how climate is capable of undermining civilization. And while a relatively minor climatic blip during the last 10,000 years was successful in undermining Mayan imperial developments, it did not prevent them from cultivating their primary agricultural staple. What is on the horizon just might, however. Recent developments in the field of paleoclimatology have given scientists a radically new picture of our Earth's climate history. The orthodox view of the last hundred years was that the Earth's climate has been and will continue to be characterized by stability. This was based on the outdated understanding that past climatic change had happened slowly, with minor blips taking hundreds if not thousands of years and major changes taking tens of thousands if not hundreds of thousands of years. Discoveries in the last decade have revealed that stability has actually only characterized the last 10,000 or so years of Earth's history (the period in which agriculture developed). For the 100,000 years prior to that, the Earth's climate continually underwent wild swings, often on a time scale of mere decades (for more on this, read Richard B. Alley's "The Two-mile Time Machine"?). Such a climate made the development of agriculture impossible, and a return to such a climate would seriously undermine the practice of agriculture worldwide (for more on this, read Brian Fagan's "The Long Summer"? and "Floods, Famines, & Emperors"?). In other words, the last 10,000 years of Mother Earth's "domesticity" have been a relatively brief interlude in the life of THE archetypal "wild woman". If the Earth's climate goes wild again, it will very likely take us with it.

In fact, the Mayan practice of farming is far more stable and climate-resilient (due to the use of a diverse blend of hardy heirloom varieties of corn) than what is being practiced by countries dominated by modern industrial agri-business. Modern hybridization and mono-cropping have seriously undermined the genetic diversity of mainstream global food crops to the extent that all of our core agricultural staples are essentially endangered species from a genetic diversity perspective (see chapter seven of "Earth in the Balance"? by Al Gore for more on this). Since it is the genetic diversity of a species' population that enables it to adapt to and survive changes in its environment, modern mono-crop farming practices are a sure recipe for disaster when set against the possibility of an unstable future climate. In addition, we are already beginning to see diminished returns in terms of our agricultural technocrat's ability to control disease through antibiotics, their ability to control bugs with chemical insecticide, their herbicide's ability to control weeds, and their chemical fertilizer's ability to restore the soil. Soil depletion as well as plagues of resistant weeds, bugs, and disease are all on the near horizon for modern agriculture, just as they have plagued farmers in the late stages of every civilization throughout history. Genetic engineering and chemicals can only forestall the inevitable and will ultimately make the return to balance that much more violent & traumatic for all those involved. In other words, if Mayan agriculture goes down, you can bet Con-Agra™ is going down.

On top of this, we add the looming problem of peak oil. The modern industrial economy basically turns oil into food–in fact, it turns oil into nearly everything we need for life–food, transportation, clothing, shelter, heat, etc.. The growth of our global economy is contingent on pumping more and more cheap oil out of the ground year after year. However, such growth does not continue forever when it is based on the availability of a non-renewable resource. Global oil production is near the verge of peaking, and once that happens the growth of the global industrial economy will begin to reverse itself into precipitous decline (see http://www.hubbertpeak.com, http://www.peakoil.org, and read "The Party's Over: Oil, War, and the Fate of Industrial Societies"? by Richard Heinberg for more on this).

Put together the three factors of; #1 the onset once again of a radically unstable climate, #2 industrial mono-crop agriculture's precarious lack of genetic diversity and inherent unsustainability relative to soils, disease, insects, and weeds, and #3 peak oil, and you get a recipe for not only the end of the "age of corn", but the end of modern industrial agriculture worldwide. Certainly such a collapse is not going to happen overnight–in fact it will likely take decades, perhaps even a

century, to fully play itself out. However, the beginning of such an end is certain to be right around the corner, ar[illegible]y
[illegible] given to prophetic Mayan sages, the date for entering that turn may very well be 2012.

Comment by RedWolfReturns

85. Jason Godesky says:

    2006: We have a schedule of primitive skills classes lined up for the whole year. By autumn, we'll have graduated "advanced primitive skills," which is always a good start. We'll be going fishing in the spring, and by fall, we'll be hunting. My New Year's resolution: Get on the paleo diet, and before the year is out, kill and eat some animal.

    2007: Year-long primitive skills course. School as yet undecided.

    2008: Buy land. Begin living off of it.

    Me: For your 2007 year, I'd reccomend looking closely at the Wilderness Guide Program at the Teaching Drum Outdoor School. I did the program back in 2001-2002 and currently am part of the volunteer "staff" at the school. As far as I know, it is the only year-long course not using a civilized educational model for "instruction", and because of this, it (again, to my knowledge) is the only course that puts one face-to-face with some of the most important qualitative lessons of primitive living needed for group survival.

    I'd be interested to find out what other courses you're considering however, since I'd always like to be able to refer people I know to more options.

    Comment by RedWolfReturns — 17 March 2006 @ 12:35 PM

86. RedWolf, I'd be interested to hear about your experiences at Teaching Drum. Jason and I have heard some nasty things about the school, namely that the students spend most of their time writing and very little time actually learning primitive skills, and that Tamarack Song abandons his classes for weeks (or months) at a time, leaving the students with no means by which to feed themselves. I assume, given the fact that you're now a volunteer, that you didn't have experiences like the ones we've been told about.

    Comment by Giulianna Lamanna — 17 March 2006 @ 12:47 PM

87. Hey Giulianna,

    Wow, I hadn't heard those rumors yet, interesting.

    My experience of having done the year-long back in 2001-2002 and having watched the year-long unfold this year is yeah, a good bit different than what you've heard.

    During my year and this year, Tamarack was never gone from camp for more than 48 hours at a time. Also, there are actually three people here at the school who's primary focus is guiding the year-long (Tamarack, his mate Lety, and his assistant Chris, who has been working with the year-long students for about four years now). At least one of them (or one of the other staff at the school, such as myself, who often help out on particular projects, skills or issues) is likely to be out at camp nearly every day.

    No books are taken out to camp, and writing is not part of the curriculum at all (i.e. no "writing assignments" are part of the program). Tamarack does give handouts that he has written that are connected to general topics he will be covering out at camp, however. If people are writing, it is to write letters to friends out in civilization, and this is their choice as to what to do with their time.

    One thing about the school, is that we don't teach based on the western civilized model (i.e. where knowledge is transmitted from student to teacher) any more than we absolutely have to. Instead, we do all we can to follow a native model, where we consider & encourage our "students" to be seekers and our "instructors" to act as guides. This means that the guide's primary focus is in helping the seeker overcome blockages in how to learn for themselves and how to access the teachers that are available to them out in wild nature. This also means that the seekers are in the drivers seat in terms of creating the experience at least as much as the guides are. Instead of a classroom lecture, you're more likely to see an open discussion around the fire circle. Instead of a rigid teacher driven curriculum and agenda, you're more likely to see learning develop organically as the seasons unfold and the seeker connects with his or her innate desire to learn.

    This approach is not for everyone, and some people react to the amount of responsibility given them in some pretty negative ways. This is why we now require all our prospective seekers to come here and experience a week out at camp for themselves before we even let them apply to the program.

    Right now the school provides regular food drops based on a paleo-diet every three days, except during those times of the year when the seekers decide they want to practice foraging their own food. Then, like most aspects of the program, the seekers decide what level of challenge they would like to experience and rise to. This past year, they foraged all of their greens for a period of about two months during the summer, then decided that they wanted full food drops in the fall so

they could focus more on hide tanning without the demands of having to forage so much of their own food.

[illegible] to how many things happen out at camp where everything is driven by the needs of the moment as where the seekers are at with their [illegible] until the [illegible] come together as a group to build primitive shelters and/or maintain the ones already there. As this is done, they move out of the tents. Same goes with fire — they are provided with matches until they chose to relinquish them in favor of being responsible for making fire by friction. All along these processes the guides are there to provide what is necessary (in terms of support and instruction) for the seekers to overcome blockages and progress as far as they can at any given time.

Basically what this comes down to is that the seekers spend as much time learning primitive skills as they desire to and are able to in the context of coming together as a group in an actual wilderness environment and with an actual paleolithic diet. One thing many of them discover however, is that there are qualitative skills (you might say spiritual/emotional skills) that must be dealt with in the wilderness that are at least as important as the quantitative skills (i.e. technical skills). For instance, dealing with one's fear and insecurity of possibly being uncomfortable by having to rely on the bowdrill for fire is as important as knowing how to make fire with the bowdrill, since once matches are relinquished, if the bowdrill doesnt work, you will be cold. Dealing with that fear (and maybe learning to accept the cold) is, in my opinion at least as important as knowing how to make a bowdrill fire. Dealing with the group dynamics of forming a circle of people who can come together and flow together to build a shelter in an efficient manner becomes as important as the technical details of how to build the shelter. Again, to me this is a survival skill of great importance that is often overlooked in our society.

One thing about the program is that it is always developing. We are doing something without prescedent (taking civilized people into the wilderness to rewild without having a viable native community for them to just join as people crossing the frontier two hundred years ago might find). At this point the year-long has six years of experience and accumulated clan-knowledge to draw upon (on top of Tamarack's and other's many years of personal experience). Each year, the seekers learn, and each year the guides learn, because ultimately the reality is that we are all seekers.

Hope this helps give perspective on what we are doing here, and let me know if you have any more questions or thoughts.

Comment by RedWolfReturns — 18 March 2006 @ 10:38 AM

88. Hmmm… it sounds like we're both telling the same story, but from different perspectives. Kind of like that scene from *Annie Hall* where the therapist asks, "How often do you have sex?" and Alvy laments, "Hardly ever. Maybe three times a week." Meanwhile, Annie says in this exasperated tone, "Constantly! I'd say three times a week!"

    You say: "Tamarack is never gone from camp for more than 48 hours at a time. Also, at least one of his staff is likely to be out at camp nearly every day."

    The source of my information says: "The *teacher* of this school is sometimes gone for 48 hours at a time! And sometimes even his assistants aren't there!"

    You also must understand that the phrase "food drops" makes me wary. My first association with it is an image of a helicopter dropping a package of uncooked, unprocessed food and then flying away. Relocating this to Teaching Drum, I imagine staff coming, dropping off similar packages, and leaving immediately.

    Either way, I'm becoming more and more disappointed with Teaching Drum. I originally heard about it as a full-immersion wilderness school wherein you show up the first day and you build your wigwam; you learn to hunt, forage, and fish by hunting, foraging, and fishing all your meals; and generally, you learn all these primitive skills by actually living a real, primitive life. It sounds like my original idea of Teaching Drum was pretty far off from the reality.

    Comment by Giulianna Lamanna — 19 March 2006 @ 1:38 PM

89. Interesting. Sorry to hear you are becoming more and more disappointed with the Teaching Drum, however, I would suggest visiting our primitive camp and talking with our seekers in person before making a final decision.

    It wouldn't surprise me if the other person you are talking to is speaking from a perspective that connects to my own reality. We all have our own truth, and often the differences between these truths is little more than a matter of personal perspective. I'd be interested to hear who your other source of information is, so I'd be clear on where they are coming from. I can assure you however, that Tamarack does not currently "abandon" the seekers "for weeks or months at a time" or "leave [them] with no means by which to feed themselves."

    My experience of the Teaching Drum is that it IS a full-immersion wilderness school wherein you show up and build your wigwam, learn to forage by foraging, and learn all your primitive skills by living a real primitive life.

    However, it seems that from my perspective & experience some of your expectations may simply be unrealistic.

    Are you expecting that our program can take civilized adults (with all their civilized baggage) and turn them into full-fledged primitive hunter-gatherers (a process that takes native children more than a decade) within a single year?

    It's certainly true that staff are not out at camp with the seekers 24/7. And I don't see what the point would be for us to be

there constantly unless the purpose was to hold people's hands every step of the way. We come out on a daily or [illegible] basis throughout the year. Our program here is not about holding people's hands, cheerleading them wi[illegible] proposed motivation, c[illegible] given people will be given the guidance [illegible] comes with others and) learns is often far more important than what one learns.

During my year-long, we had seekers with years of prior experience in "primitive skills" (three of which had spent well over $10,000 at Tom Brown's school) and seekers with no experience at all beyond going camping with their parents as children. Within two months, you couldn't tell the difference, and (at least two of the three) Tom Brown graduates were pretty damned pissed at all the money they had (to use their own word) "wasted".

For myself, I had spent six months and over $3000 on other primitive skills schools before I came to do the year-long. At no time did I ever feel overqualified for my experience here nor did I ever feel that it lacked appropriate challenge in terms of learning the primitive lifeway in a holistic manner.

We don't offer any short-cuts here, so people are sometimes dissapointed with what can seem like a "lack of progress", but the progress our seekers do make is real. No Bullshit.

All that said, I'm certainly not interested in convincing you to come here if someplace else might be better suited to your desires and needs. I'm curious as to what other programs you might be looking at? I'm always interested in being able to refer people to other options.

Oh and btw, I'm aware that this discussion isn't exactly about the topic of this thread, so we could continue it by email if you'd like. Feel free to contact me at redwolfreturns@teachingdrum.org.

Comment by RedWolfReturns — 19 March 2006 @ 11:31 PM

90. I don't think either of us have entirely made up our minds about Teaching Drum yet. We've heard a lot of good things about it, but we've also heard some things to give us pause. I'm not saying you're not right, but we have no way of knowing for ourselves just yet what to believe. We'll be investigating the situation a lot more, because so far, Teaching Drum still looks like the most promising opportunity available for a year-long full immersion course. Others, such as the one offered by Earthwalk Northwest (the first such program I've found), are not full-immersion. Naturally, one can't expect to move all the way from city-slicker to native-born badass in only a year, but it is my hope that by the year's end, we'd have enough of a foundation to begin the main project that occupies the Tribe of Anthropik: creating a new, sustainable culture, and becoming native to the land we live on by becoming part of it, rather than trying to conquer it or pretending to be its "stewards."

    Comment by Jason Godesky — 19 March 2006 @ 11:42 PM

91. What Jason said. I hope you don't feel like I'm attacking you - I'm just trying to get a better picture of what's out there and what's worth doing, and my main way of doing that is poking holes in everything.

    Comment by Giulianna Lamanna — 19 March 2006 @ 11:50 PM

92. Sounds good. Ultimately, I wouldn't expect anyone to know if our program is right for them unless they come here and see it for themselves. As I mentioned before, we don't even let people apply to the program until after they have done that. I also fully expect that our program will not be right for everyone, and I wouldn't want them to come here if that's the case.

    For myself, I can say that my life's project is pretty much the same as what you describe the Tribe of Anthropik's as being. Re-becoming an integral native part of the land on which we live is what I live for and what the Teaching Drum exists to facilitate. Personally, I'm excited to play together with anyone who shares that vision.

    I'm not interested in putting a lot of energy into combatting gossip however, so I would suggest not wasting too much time listening to either me or your other source of information — instead, just come visit and see for yourself.

    I'll check out Earthwalk Northwest (I assume they have a website?) Do you know of any more than that?

    Comment by RedWolfReturns — 20 March 2006 @ 12:39 AM

93. Yeah, that's actually one of the things I like about Teaching Drum: they refuse to even let themselves cheat you. It's a good sign!

    We're taking classes at Racoon Creek State Park's PATH WAYS program. They have various weekend classes throughout the year; we've already taken Edible Wild Plants and Medicinal Herbs. It's obviously not full-immersion, but if you take all the classes available, I'd say that's enough to prepare you for a particularly rugged camping trip. I like that the people there are nice and down-to-earth.

    Comment by Giulianna Lamanna — 20 March 2006 @ 10:52 AM

94. I've just returned fro[illegible] trip to Washington to check out Earthwalk Northwest's Primitive Skills Apprenticeship [illegible] Wilderness Awareness School's Residential Program. Neither is a full-immersion program, but might perhaps be [illegible] year long extension [illegible] At WAS there seems to be a great [illegible] which can be practised just as well in civilization. For at least one student, this was a future and not a bug. As she said, EWNW teaches you things you can put to use wihtout having to live out in the wilderness full time, and crafts that you can do at home with things harvested in the wild. Two of the students told me that they might criticize EWNW for spending too much time indoors, note that one of those students had previously completed the WAS Residential.

Comment by scruff — 20 March 2006 @ 5:13 PM

95. :lol

Here are a couple of other places I know of that do long-term/intensive courses that folks here might be interested in checking out (I've never done any courses with them, however):

http://www.wolfjourney.com/adult/stoneage.html

http://www.apathways.com/Subjects/CourseAndSchedule/internships.htm

http://www.hollowtop.com/lynx_shepherd.htm

Oh, and in case anyone reading doesn't know about the Teaching Drum and wants to see what we're talking about here (and btw, our website should be getting a major overhaul soon, so if you don't like what you see, check back in a couple of months). Anyway, here's our site:

http://www.teachingdrum.org/

Comment by RedWolfReturns — 20 March 2006 @ 7:59 PM

96. http://www.dancinghawk.com/

Comment by Charly — 20 March 2006 @ 10:41 PM

97. Jason,

You comment:

> It seems like I'm arguing that hegemony will be broken quickly, though hangers-on may persist for some time, while you're saying, hangers-on wll persist for some time.

More or less. I suspect we also disagree about the scale of the surviving enclaves, their probable long-term fate, and the likely level of technology in the retribalizing zones. I don't share your hatred of civilization, and it seems to me that you're allowing that hatred to affect your estimate of the future, but I certainly don't claim omniscience — for all I know, you might be right.

Dr. Richard Duncan and I have been around this same argument more than once. He's convinced that we're set for a return all the way back to Stone Age hunting and gathering; I consider Iron Age technology, multicrop horticulture, and small urban centers along early medieval lines the most likely cultural level in large sections of North America. Neither of us has convinced the other. I think he's wrong, but Rich is no idiot.

The thing I think people most often miss in discussing the decline and fall of industrial society, though, is that place and time matter. It's not an all-or-nothing thing. There are huge swaths of the Great Plains and the mountain West right now where collapse has already happened; all that's left is boarded-up buildings and a scattering of retirees too stubborn to leave. Once fuel prices and economic trouble break supply chains for local stores, those areas will be completely abandoned, and other areas will begin sliding down the same slope.

(That's catabolic collapse in a nutshell, BTW. To meet rising maintenance costs with dwindling resources, a society in catabolic collapse has to abandon or cannibalize existing capital. As its capital diminishes, though, its ability to meet rising maintenance costs decreases even further, and so on around a vicious circle. As I see it, the US has been in a catabolic cycle since the 1970s — look how much of our industrial, agricultural, social, and intellectual capital has already been turned to waste.)

My scenario in "The Long Road Down" was set in a city, and my guess is that it's a reasonable guess of how the decline will take place in those urban areas close enough to viable agricultural areas to maintain some level of organization during the first century or so of the decline. A scenario located in rural South Dakota or eastern Oregon would be completely different, and probably more along the lines of your implosion followed by retribalization model. A scenario set in the Boston-to-DC urban corridor would be something else again, and very, very ugly.

I suppose the simplest way to say what I'm trying to say is that it's only in an age of extravagant energy and resource use

that the world has a single history. Through most of the time our species has been on earth, every region has had its own distinct history, and only the very occasional migration or trade route linked one region's history to another. [illegible] will be true again. I do [illegible] e will [illegible] ly be regions where it's an accurate

Comment by John Michael Greer — 21 March 2006 @ 5:08 AM

98. I don't share your hatred of civilization, and it seems to me that you're allowing that hatred to affect your estimate of the future, but I certainly don't claim omniscience — for all I know, you might be right.

Have you perchance read the Thirty Theses? That opinion is not unconsidered. As far as bias, could I not say the same? Which comes first, the attitude, or the facts?

> I consider Iron Age technology, multicrop horticulture, and small urban centers along early medieval lines the most likely cultural level in large sections of North America.

That's a scenario I addressed in thesis #29. Whatever else one might be able to achieve, the real key to an Iron Age level of technology is *iron*. Our surface deposits were all exhausted long ago, leaving the only remaining ores deep underground–where an industrial infrastructure is required to obtain them. What could be scavenged is mostly alloyed into forms that are difficult to impossible to rework. In fact, the metals that would most likely survive are precisely the ones with limited to no economical use.

> I suppose the simplest way to say what I'm trying to say is that it's only in an age of extravagant energy and resource use that the world has a single history.

I've only written one so far, China and India, but more are forthcoming in the "Shape of Collapse" series, exploring what collapse looks like in various areas. Of course, on one level, collapse *is* an all or nothing thing, since any area of complexity will try to prop up all the rest, as Tainter discussed with peer polities (I synopsized that argument with, "We All Fall Down"). However, what collapse will look like varies greatly from region to region, and while one area may collapse to the Neolithic, another might collapse to the Paleolithic.

Ultimately, there's far more diversity among Stone Age cultures than anything above it, so I don't see this as any kind of severe limitation on our possibilities. The possibilities are infinite. I do think they will be limited to a given range, however. Oddly enough, it seems that the possibilities that will no longer be on the table are precisely the ones that threaten freedom and egalitarianism. As Laguvalin put it, "In fact I'm not actually a Biblical man, but from a more objective point of view I'd have to see this as a winnowing of the 'wheat' from the chaff.'"

Comment by Jason Godesky — 21 March 2006 @ 10:31 AM

99. Jason,

You wrote:

> Have you perchance read the Thirty Theses? That opinion is not unconsidered. As far as bias, could I not say the same? Which comes first, the attitude, or the facts?

Always a fascinating question. I certainly don't think your opinion is unconsidered; I disagree with it, but that's quite another matter. I've read your theses, of course, and agree with most of them. My disagreements with the remainder, and with neoprimitivist arguments generally, are based on a sense that they flatten a very complex realm of interpenetrating possibilities into an almost Gnostic dualism in which evil "civilization" and good "stone age tribalism" are the only two conceivable options.

> Whatever else one might be able to achieve, the real key to an Iron Age level of technology is iron. Our surface deposits were all exhausted long ago, leaving the only remaining ores deep underground–where an industrial infrastructure is required to obtain them. What could be scavenged is mostly alloyed into forms that are difficult to impossible to rework. In fact, the metals that would most likely survive are precisely the ones with limited to no economical use.

I have to say I find thesis #29 probably the weakest of your arguments. I know enough people who are doing creative things with scrap metal from autos, using hand tools and low-tech forges, to question your claim that salvaged metal isn't a useful resource. There will be hundreds of millions of dead cars in the postcollapse USA alone, along with nearly equal amounts of other items made of easily workable metals, and there's also rebar — countless tons of it — to be had by the simple expedient of breaking up concrete buildings.

Also, are you familiar with bog iron? Naturally occurring chemosynthetic bacteria in wetlands concentrate and deposit iron in usable quantities. Before the beginning of the industrial era, bog iron was a common source of raw material for blacksmiths in areas that didn't have ready access to mines. It'll be a few centuries before bog iron deposits build up to workable levels, of course, but the long view is relevant here.

Finally, I'm baffled by your claim that the metals most likely to survive will have little or no economic use. Alur[illegible] zinc, copper, and many other nonferrous metals will survive the end of industrial civilization in huge quantities; [illegible] from salvage, and [illegible] nology [illegible] Of course metals won't be available in the quantities we're used to today. (Neither will anything else, including people, but that's another matter.) The salvage societies of the age of deindustrial transition will become very good at stretching limited supplies to meet essential needs, or go under. My guess is that they'll become good at it; most human societies get good at this sort of thing very quickly when need requires it.

For these reasons, I believe that metals will be available to the salvage societies of the immediate deindustrial era, and to a lesser extent to the transitional societies of the coming dark age. Metals may prove a good deal less necessary in the farther future; polished stone blades and wooden digging sticks are as efficient as metal tools for the sort of multicrop perennial horticulture that today's organic gardeners and permaculturists are moving toward (and tribal peoples in places like New Guinea have been doing for more than ten millennia). Mind you, saws and a few other metal tools would be useful, but bog iron can provide for that.

But all this is speculation, of course.

Comment by John Michael Greer — 23 March 2006 @ 4:56 AM

100. I have to admit, I was quite swayed by the argument on metals when it was first presented to me, but I also am fairly foggy on it. I'll need to do some more research on that issue. For bog iron, by the time they build up again–centuries, as you say–the Holocene will likely be a fading memory. Can an Iron Age flourish when agriculture is no longer possible? I don't know. Regarding "economic uses," I had in mind plows or weapons; none of those metals–aluminum, zinc, copper, etc.–hold an edge. They can be used for many innovative things, but none of them useful for war–whether against other humans, or against other species (more commonly known as "farming").

    Comment by Jason Godesky — 23 March 2006 @ 10:56 AM

101. Jason,

    I'd suggest that agriculture and metal technology are two basically unrelated issues. There have been many tribal societies, such as the Sami and many Siberian tribes, that use metal but don't practice field agriculture, and there have also been agricultural, hierarchical, urban cultures such as the Aztecs that used stone tools. Metal isn't necessary for plows — wooden plows were standard for millennia, they just can't be used on heavy soils — and plows aren't necessary for agriculture; wetland rice and corn don't require plowing, and for millennia they were planted with digging sticks.

    Nonferrous metals don't hold an edge by themselves, true, but they can be used as a surface protection on wood. Hammer aluminum sheet over the cutting edge of a hardwood plow, for example, and you increase its efficiency by a good bit. The same is true of a digging stick, a dibble, or any of a dozen other basic agricultural tools. Nor do all weapons need sharp edges — ever seen a mace?

    As for bog iron, it won't be there for a few centuries, but it won't be needed for quite a bit longer than that. The average modern city contains millions of tons of metal in relatively pure form. If the iron all rusts, well, rust is a high-quality iron ore — reducing iron oxide to iron is incredibly easy. To some extent, industrial civilization has taken very dilute, dispersed ores such as taconite and concentrated the metal into very high-quality "ores" such as ruined cities, where it will be easily accessible to future societies.

    So your claim that civilization will be impossible in the future needs to rest on something more solid than the metals argument. On the one hand, as the Aztecs et al. show, imperial urban civilizations can get by just fine without metal tools; on the other hand, there'll be no shortage of metals for many centuries into the future.

    Comment by John Michael Greer — 26 March 2006 @ 4:03 PM

102. The real root for thesis #29, in my mind, is about farming. We've depleted most of the arable land for the near future, and the far future will likely be precluded by climate change. The bit about metals is merely a supporting point to that.

    But, I've been rethinking my position on metals, and I should be able to finish my "correction" to thesis #29 shortly.

    Comment by Jason Godesky — 26 March 2006 @ 4:17 PM

103. Quick couple of comments on the iron business, though I know this thread is the better part of a year out of date.
    One, in the immediate decades during and post-collapse, there will indeed be
    extremely generous quantities of metals
    lying around literally for the taking.
    However, metal above ground, refined into useful concentrations, also decays and rusts very quickly. The scavenger societies which will grow up around the ruins of civilization to mine out the useful bits and quite
    likely base part of their livelihood on the resulting trade (there was pre-agriculture stone age trade in materials like obsidian which spanned great distances, for example) , this

is a very short term situation. After a century, how much of that metal will remain unrusted? Without a lot of energy and labor, the rusted stuff is basically a waste material.
In the early years when
Anything rusty will be left to rust
biggest source of readily accessible iron after 50-100 years will typically be rebar in concrete. Even in extremely densely reinforced concrete, the rebar makes up only perhaps 10% of the total volume. Rebar still rusts, even when its encased in cement (cement is very porous and admits and holds water very well), and as it rusts, not only does it swell and break the cement around, but also, the breaking of the cement to get into it will tend in
most cases to result in not a high grade rust ore, but a low grade rust-and-dust ore that needs even further processing. With energy supplies being very limited, it is
one thing to rework existing metal,
it is another thing to start smeling essentially from ore all over again.
How to filter such rubble? it would
from an engineering standpoint probably involve a lot of crushing
and mechanical manipulation. For a
material like iron, not worth your time when there's still _something_
left to be picked clean from the rubble elsewhere. Thus, in practical terms, the process of selecting the
few good slivers and chunks from the
mass will continue to allow the vast majority of the available iron to decay back into useless concentrations (for metalworking goals). After perhaps another 50 years, the supply of such metal will
also probably in most cases be depleted, leaving now much lower grade 'ore' remaining.
In addition, keep in mind that _smelting_ iron, which is necessary to remove the oxygen from rust and rust-like iron ores, requires rather
high temperatures, which cannot be achieved, using plant matter as fuel,
without charcoal _and_ properly shaped furnaces _and_ a forced draft.
There was a very widespread culture of metalworking that had developed for two thousand years before iron smelting was discovered the first time around. Today, while any library has dozens of books about smelting iron, don't underestimate how much
knowledge, especially practical knowledge useful for the small scale smelting one would be able to carry out 150 years post-collapse, will be lost. Not only will whatever knowledge is widespread today almost immediately lose its value as people
learn the hard way that knowledge about machines is no longer important for life and knowledge of life and
the earth _is_, but even among the
communities of scavengers who _do_ retain daily contact with the carcass of civilization picking the bones,
reworking good metal will dominate for a long time- so long that smelting will have to be invented all over again. It will not likely play
a significant role, since it will be
working a _downhill_ slope the whole
time, and not an uphill escalation
like it did the first time. Those
who do rediscover smelting (and really, nonferrous metals, aside from bronzes, lack sufficient strength and hardness to really play an important
technological role, though demand
for them as ornamentation, small
luxury articles, etc, will likely
persist as long as the articles
themselves do) will do so in an
environment where their stocks of available ores will be rapidly diminishing. Rusty rebar still entombed in crumbling cement is an
okay (albeit labor intensive) ore-
city rubble after 150 years is much
less so.
The nature of reinvented smelting in
scavenger communities is such that
while they might practice it for
a century or even two, it will die out in each site after not very long.
Scavengers who sit on ancient landfills and dig up artifacts will
have a longer go at it, since the
oxygen-poor environment in those will
keep a lot of ferrous metals unrusted for a lot longer.. though it will
cost a lot more in labor to dig the stuff up than just collect it from
the ruins.
Overall, though, the technological impact of this supply of iron will
probably not have a very long duration. In the critical first years during and after collapse, from the
perspective if the preservation of knowledge important for such scavenging, the demand for the products of such scavanging will also be nearly zero- why would i need to worry about how to make a knife when
there are literally millions of acceptable (if not very good) knives

free for the taking in the abandoned
settlements? When that one wears out?
decade or more, the
quite easily meet the demand with
anybody to rework or manufacture those
metals. Thus, the incentive to learn or teach the techniques and knowledge
of such a business will be much more limited to those for whom it is a matter of choice, not economic livelihood.
Someone who even today works metals as a hobby or a labour of love will likely teach his children (or any other eager to learn young'un) regardless of the economic
argument. But, those people are few and far between, and they will be
the only real foundation of the future scavenger societies that will
keep most of the world in an odd
mostly-foraging iron age for probably
two centuries or more.
Also, as regards the great abundance of metal products, I very strongly argue that the scavenger industry will be one of reworking the metals
and very rarely even getting to the
point of fully melting them, not only because of the obvious issues of fuel and labor availability in the absence of large economic structures, but also because of the issue that in today's world, very few metal products are made of alloys with very good general properties. Theyre
made of alloys designed to be the cheapest thing that will do the job. Fifty years ago, generic average-quality steel was a staple material in everything from childrens toys to washing machines to kitchen appliances to skyscrapers to cars. Today, dozens of different alloys have replaced them all in the quest to cut costs. These alloys are not
easy to mix together or consider as a bulk material. They will likely be, over time, identified for their particular properties and be treated more or less as different raw materials altogether, but the degree of manipulation required to change the formulation of those alloys will
likely never reappear in many sites, and where it does, it will probably
not become too widespread. We will
have an iron age for a while, but
the economics of scavenging will only
last for a couple of centuries, and
will in the process undo the conditions which made the remains of the cities such good sources of
metals. Once that rust mixes with the
rest of the crumbled ruins, it will
need, effectively, an industrial-age
level of technology to ever exploit again in any meaningful quantity if at all. The lack of industrial technology at that point will make it a moot point. The smaller trickle of
scavenged metals from the remaining bits on the carcass will further take the economics of using metals away from most reality, and it really won't be until geologic activity,
mostly erosion, expose new high quality ores, that metal use would
ever really be possible on a widespread scale again.
As pointed out, metals are not necessary for agriculture or civilization, even big imperial civilization. However, civilizations which lack metals also run into the
limits of their ability to outrun the consequences of their escalation _much_ sooner, sometimes after only a few centuries, and collapse. Metals
allow the game to continue for a lot longer before the crash comes (and
make it a lot owrse than before).
While I disagree with Jason on the totality of the unviability of any kind of horticulture, agriculture, eyc, it is indisputable that the scale of it will not be repeatable for a long time. The best flatlands which produced not only the food surpluses but also the territorial coherency and geographic ease of mobility that were important enabling factors in the growth of agricultural villages/towns beyond some level of scale into kingdoms and empires are exactly the ones which are most disastrously depleted and on artificial life support today. Little hamlets practicing some level of horticulture will persist for much longer- but they will be individual cases and not have the ability to really replicate themselves anywhere else. Over time, they will either form into their own peculiar local culture, or else be integrated into the larger hunting&gathering communities around them and be just a local peculiatiry. Agriculture and civilization will be out of the question for a long, long time.
Metals will be widely available for
a couple of centuries, and for a couple centuries more remain familiar if uncommon, before they become scarce enough that most people won't even recognize them. But, without metals and the great magnification of power they offer, civilization, stripped of its most fertile territory, will have no chance in the
regions where it was marginal even in the best of times. By the time that
land does recover to conditions where agriculture would be practical on it,
there will not be any real remaining agriculturalists or civilization ready to pounce on it and rebuild a neolithic farming society (assuming
that there is some kind of inherent
pressure in people to establish farming, which is a ridiculous idea).. agriculture was an accident people fell into when the conditions were right. Usually, the conditions werent _that_ right, and the people

crashed into the limi[illegible] pretty
[illegible] without [illegible]
[illegible] s was it able to catc[illegible]
available resources, metals espec[illegible]
and the conditions are just so (its not
impossible) and an escalation is again triggered, it will not get nearly as far as it got the first time around, and the crash, just as inevitable as always, will necessarily come much sooner and
before very much lating environmental damage is done. That's the real issue. Agriculture and civilization
are like mold, they will pop up when the conditions are right and a spore by random chance falls into them- but
until the conditions exist for such an escalation to reach crisis proportions, those new emergences of the mistake will burn out and the rest of the world will barely notice.
It will likely happen over and over and over again. Until geologic time
passes and the mineral prerequisites are again available, there is _no_ chance that civilizations will ever develop into world-threatening monsters again. This was a one hit wonder.

Comment by Anonymous — 21 November 2006 @ 5:02 PM

104. Without exponentially more oil from Iraq, peak oil will be causing enormous problems by 2015.

   Comment by Jason Godesky — 2 July 2007 @ 12:43 PM

105. Sometimes, I'm amazed at how prominent the bullseye on 2012-2015 is getting.

   Comment by jhereg — 2 July 2007 @ 1:24 PM

106. It certainly makes me more confident in the prediction.

   Comment by Jason Godesky — 2 July 2007 @ 1:27 PM