

Futures of Weather Related Disaster Recovery

Baseline future

Time Horizon (The future date of the forecast): 2025 to 2030

Baseline Forecast describes the difference between the present and the expected or most likely future of the domain.

Name of the Individual Domain: “Weather Related Disaster Recovery”

Constants <i>(what is unlikely to change before the time horizon)</i>	<ol style="list-style-type: none">1. Coastal and at risk populations will remain at about the same levels.2. Budgeting for disaster response and recovery will remain constant (but be increased on an emergency basis to meet crises).3. Attitudes about sharing resources with calamity struck areas will remain positive (providing that charity fatigue does not become an issue).
Trends <i>(can say “more” or “less” of something)</i>	<ol style="list-style-type: none">1. Weather related events’ frequency will continue to increase as the atmosphere warms.2. Government agencies will continue to combine and improve communications for events3. Meteorological technologies and training will improve.
Goals, plans <i>(announced intentions of influential stakeholders)</i>	<ol style="list-style-type: none">1. The ICC (International Code Council) has plans underway to improve Storm Shelter codes, and has extended their ongoing Disaster Response Network to help with disaster recovery code issues assistance for jurisdictions in the South and Midwest areas affected by severe weather.2. The United Nations in their report “resilient People, resilient Planet” has several sustainability goals that revolve around disaster risk reduction, specifically; diverting resources to address climate change induced higher frequency weather disasters, risk reduction strategies, and scaled up humanitarian aid capabilities (following the calamities).3. FEMA in their 2012 report says that they will foster a whole community approach to prepare for, protect against, respond to and recover from disaster. Continuing programs include national dialog and outreach for private industry.

Description of the Baseline (Expected) Future of Disaster Recovery:

On the Atlantic and Gulf Coasts we were blessed by a relatively calm hurricane season last year (2029), but the National Hurricane Center (NOAA) outlook indicates an above-normal Atlantic season for the 5th year in a row.

Across the entire Atlantic Basin for the six-month season, which begins June 1, NOAA is predicting the following ranges this year:

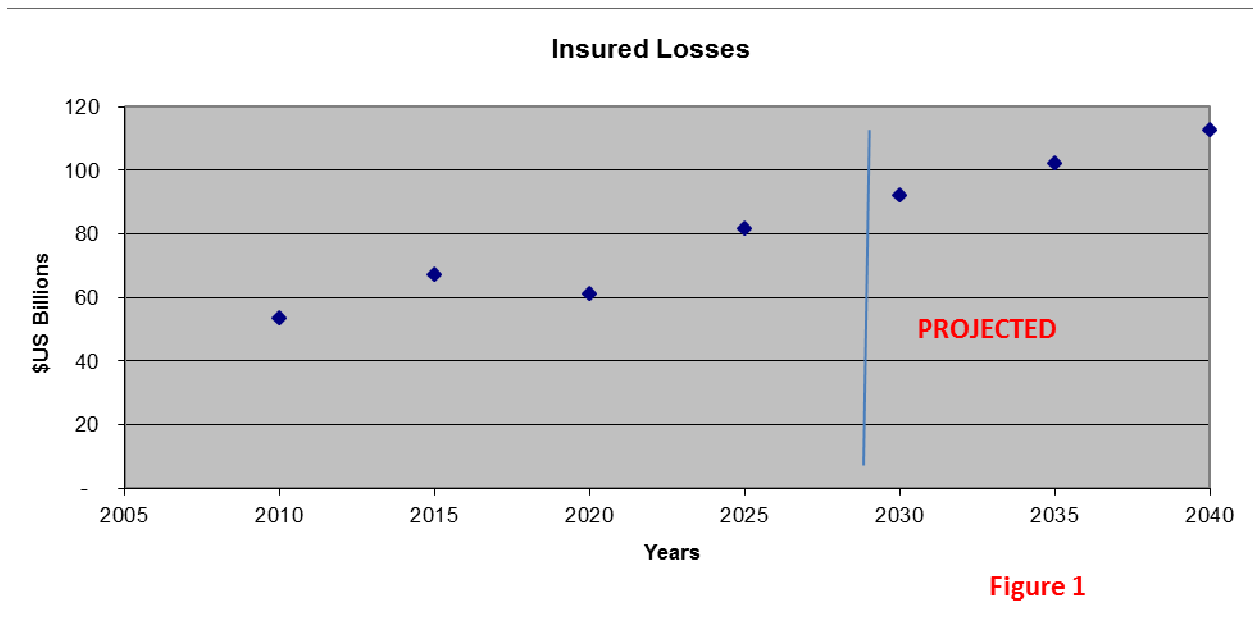
18 to 24 named storms (winds of 45 mph or higher), of which:

9 to 15 could become hurricanes (winds of 80 mph or higher), including:

5 to 8 major hurricanes (Category 4, 5 or 6; winds of 117 mph or higher up to 163 mph, and storm surge from 13 feet to as high as 24 feet or greater).

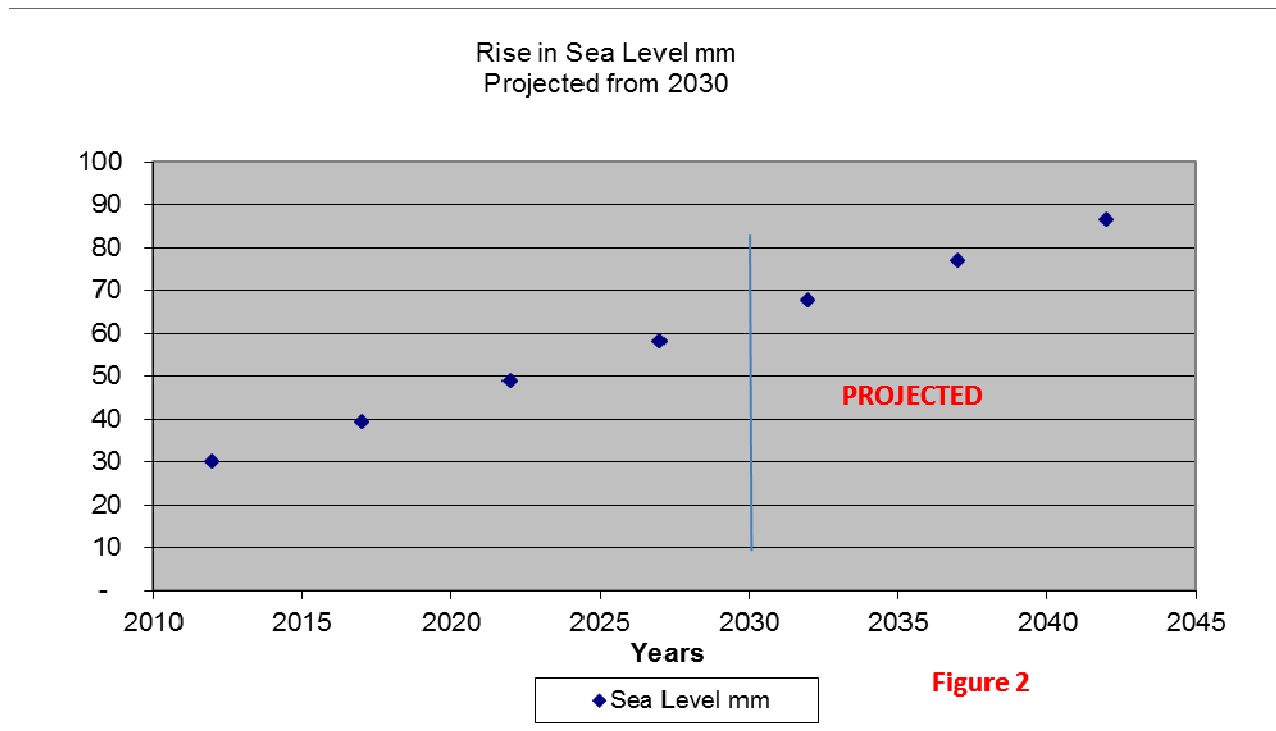
Each of these Category ranges is 70 percent likely, which indicates that this season's activity will exceed the seasonal average of 15 named storms, 8 hurricanes and 4 major hurricanes.

These predictions include the new Saffir-Simpson Hurricane Wind Scale and Storm Surge Thresholds from 2015. Storm surge in particular has been more closely watched as the insurance companies have demanded relief from flood and rising water damages – which far outweigh the risk of wind. Based on projections the damage from noted weather foresight organizations insured losses are expected to rise steadily (Figure 1).



Thanks to new tools such as better storm surge graphics with include; time to surge, time under peak, time to pre-event levels, and predicted storm wave heights for sea captains, coastal and low-lying area residents can evacuate timely and rescue operations can be staged and planned with confidence. Also, there have been exponential strides in predictive modeling with the introduction of nano-transmitters into storm structures. These tiny, biodegradable position and acceleration sensors report incredible amounts of data to the real time storm models to allow predictive accuracy of land fall and strength that was a fantasy only a decade ago. The most powerful computers in the world are now used by meteorologists. This inevitable blending of technology and climate science has required a new breed of scientist/engineer and the best universities have waiting lists full of bright young people vying for this education. *[Note: this was partially driven by the early century upsurge in demand for better meteorological forecasts on which to base renewable energy inputs for grid reliability and the need for more reliable crops to feed the burgeoning population].*

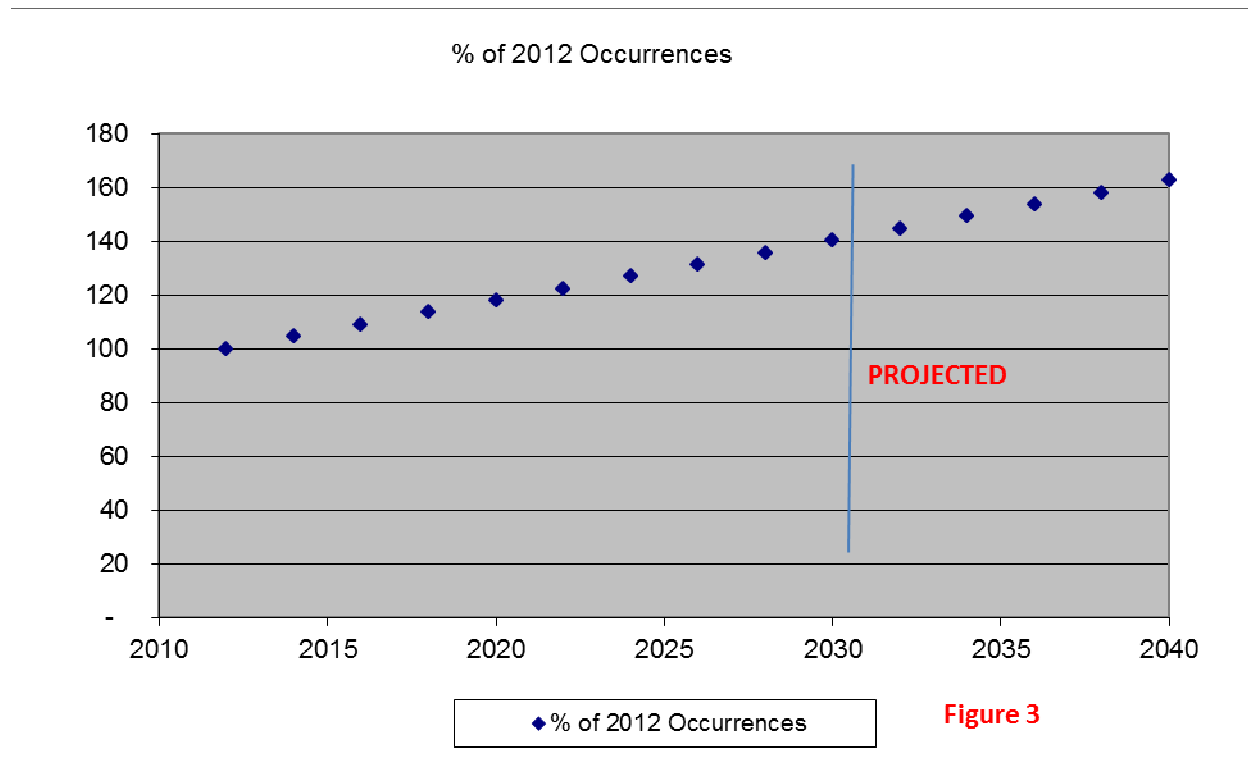
Better tools have been in the works for a decade and come none too soon to deal with the rising sea levels – these levels are forecast to continue to rise from current levels even higher (Figure 2).



The results of this increasingly normal, “above-normal” storm activity (see Figure 3) will be lessened by the adoption of more appropriate building codes (where permanent structures are allowed) and the new class of semi-permanent structures that can be relocated in case of storm threat. Moving your house to avoid a storm was not possible until the predictive modeling got really good!

Coastal residents that are affected by storm events can access combined federal, state, local and NGO aid with a single identification number verified based on biometrics. These accounts are set up based on geographic areas and administered regionally during the “peace time” between storms. Local laws requiring under skin pet rfid’s are common and have had the combined effect of reducing animal theft and facilitating the reuniting of pets and owners quickly after storm events.

A recent forecast of storm frequency based on a linear model using 2012 occurrences as 100% and extrapolating out to 2040 shows that we might expect as many as 60% more storms for which insurance damage is substantial



Summary:

The impact of weather related storm losses on coastal and low-lying inland areas is expected to continue to rise.

Only with proper allocation of resources, technology, risk mitigation, and relief agency coordination (local and national government as well as NGO) can we hope to prevent serious economic and human losses.

Insurers will continue to require the added protections of improving building codes, sensible land use rules, and predictive tools that help move people and property out of harm's way before disaster strikes.

Alternative Futures

Trend reversals	<ol style="list-style-type: none"> 1. Weather: <ol style="list-style-type: none"> a. Might drop back to normal [reversal] b. Might continue as trending (more violent due to climate change) [Baseline] OR c. Might reach a tipping point and become extreme – Cat 5 Hurricanes and Typhoons wandering coastlines unceasingly; droughts in the breadbaskets due to interrupted rainfall patterns, etc.. [wildcard] 2. Meteorological Science – Now on a steady march to improve Climatic understanding and prediction could be stymied by public demand for “non-nerdical” presenters, real scientists need not apply.
Unfulfilled intentions, plans	<ol style="list-style-type: none"> 1. FEMA could be unsuccessful in community outreach to engender whole community involvement for disaster recovery and risk mitigation. 2. The UN report “Resilient People, Resilient Planet” could be ignored. 3. Building Construction Industry lobbyists could block or substantially slow building code updates due to perceived short term difficulties.
Potential events, wildcards	<ol style="list-style-type: none"> 1. Extreme Libertarianism grips the countries political system and all government agencies are reduced to under-funded skeletal staffing. 2. Breakthrough technology gives rise to nano-bot, weather control, macro-robotic networks, working on semi-autonomous programs 3. Item 1.c. above.
Issues, conflicts, controversies, dilemmas, choices	<ol style="list-style-type: none"> 1. Coasties vs. Inlanders – battle for influence on the political system further Balkanizes US politics; “...you either get it or you’re all wet!” is the Coastly motto. It’s all about budgeting resources. 2. Mobile society: prejudice against the coastal nomads engenders bitter, territorial reactions as well as advocacy. 3. Insurers drop out of the game as high rates and high losses make coverage impossible to buy or sell.
New ideas, images, perspectives	<ol style="list-style-type: none"> 1. News pictures of coastal nomads moving ahead of storms 2. Blog of the Coastly attains a 100,00 followers and Google ads 3. Extreme weather chasing tourists. 4. Vehicles equipped for high water circumstances – from the factory.
Key uncertainties	<ol style="list-style-type: none"> 1. Political will to set aside funding for increased weather losses and changing patterns 2. International cooperation – will the world tire of the constant “emergencies” – “oh, that was just another midnight tornado in a suburb, shouldn’t take too long for them to dig out”; to the point where money and aid no longer flows. 3. The effect of the combined natural gas boom (cheap fertilizer/hydrogen) and violent coastal and climatic change.

Leading indicators	Referring to Key Uncertainties item 1 above: Recent employee benefits in the Philippines have been increased to include 5 days of weather disaster leave. Item 2: Charitable fatigue was evident after Katrina and then Rita ripped the Gulf Coast, and consider Haitian hurricanes, earthquakes, cholera epidemics, etc. And cheap natural gas...
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It's 2030. We live in a changed land

- THE COAST IS UNDER NEAR CONSTANT ATTACK FROM STORMS.
- NANO BREAKTHROUGH BY THE GOVERNMENT IS IMMINENT.
- TELEVISION FORECASTING IS VACUOUS CRAP.
- WEATHER CHASING TOURISTS LIVE VICARIOUSLY IN HARDENED MOBILE HOMES.
- THERE IS INCREASED BALKANIZATION OF THE COASTS VS. THE INLAND DESERTS.
- THE SECOND GREEN REVOLUTION HAS ARRIVED

You can barely make out the spray painted limerick on the levee bulkhead:

*Many a flood have I seen
Here on the shore in 'Orleans
Another is coming
I'm so tired of running
The water is making me mean*

The coast is under near constant attack from storms. There is no hurricane season. The storms run up the coast and another one spawns off of Africa and spins destruction to North American coasts. The great

It's a common story, "...our old home is gone. Dad used to make a living shrimping, but now we take what we can get from the government and odd jobs – mostly clean up in the debris fields. You can make a pretty good living if you can keep your truck running and the hydraulics good on the picker; wish I was a farmer..."

Coasty Blog:

3/31/2030 – my friends are all excellent swimmers – you have to be to get around our neighborhood most of the time. Since school is pulled in off the edu-net now we can stay in the trailer and move the classes along just fast enough to keep the juvi-narcs off our butts.

Headline – Government Labs Close In On Nano Weather Bots

In a repeat announcement today the Los Alamos labs weather department chief indicated that although she feels they are right on top of a breakthrough in the nanobot weather control program, they are not yet ready to launch. The idea that tiny micro bots in the billions can affect weather patterns directly when injected into storm architectures is thought by some to be science fiction, but the Los Alamos labs have been given billions to land the miracle weather control device. The nano-bots would operate under self organizing principles. There have been demonstrations with good success in tightly controlled circumstances, but not one large scale storm has been attacked. The Inland dominated Congress has repeatedly tried to cut the funding for this as it is just more coastal pork, but the Farm lobby has successfully overcome their objections in some tight votes as the technology shows promise for tornado and hail storms that wipe out unprotected crops.

On the wall in the I-10 rest stop bath room outside Orange:

*The freeway was drowned and then shut
My mobile got stuck in a rut
Then the storm turned to sea
It was good news for me
Now it stuck in some sea captains' butt!*

Coasty Blog:

4/2/2030 – really!!! My God! The idiot on Weather Zone knows less about the freaking weather than an Inland farmer! What an ass. The nerve of these people trying to juice up the news with a bit of humor as the tidal surge tops 12 feet AGAIN and with all of the music playing over the weather news (they are trying to keep our lives on a sound track) we almost missed the evacuation notice and got a half hour late start. Looks like rations again – the power is out. Thank God for batteries and backdooring the edu-net for access.

Headline – Storms Recovery Costs Top Space Funding

The 2013 Federal Budget shows a marked increase in storm recovery funding. The Secretary of Disaster Relief and Recovery department (cabinet level since 2025) was heckled and two protesters were removed by security as the announcement was made.

The ever present effigy figures Storm and Norm were in the crowd as the unofficial “mascots” of the Coasty community and the Inland Coalition for Fairness (ICOF); and were entertaining the press and others as their supporters handed out flyers via RFID tags which read into personal comm’s. The practice of tagging unwitting crowds with advertising or position statement broadcasting micro chips by attaching them to clothing is booming.

Secretary Ezen read off the budget line items with commentary on the past performance of her department with what some claimed were extremely naïve optimism. Coastal benefits vastly outweigh the earmarks for inland tornado and wind storm recovery plans, but failure of crop after crop from weather damage is beginning to bring the plight of the corporate farming industry into the public conversation.

Coasty Blog:

4/12/2030 - My friend Joad is a bit of a mooch, but makes out ok. Their family lives in one of the first-gen hardened trailers. If you don’t get out, the trailer will take a pretty good hit without turning into a pile of crap. The doors almost always come off and the windows leak and towing it is miserable because of the weight. It costs a lot of Hgas to move it. We all move out when the storms coming are too bad. Joad leaves last, usually; I think that they pick the park for abandoned gear and anything that will sell after the storm. His mom and dad never go to work – always looking. My folks have contract jobs at the port, but they are on and off so often as the modular ships have to duck into shore and out to dodge the storms.

Becky told me a limerick that is going through the camps:

*The storm was a punch to the torso
My head was awry for a day’rso
The good news it seems
Is that FEMA’s been creamed
And we won’t see that government a\$\$HO!*

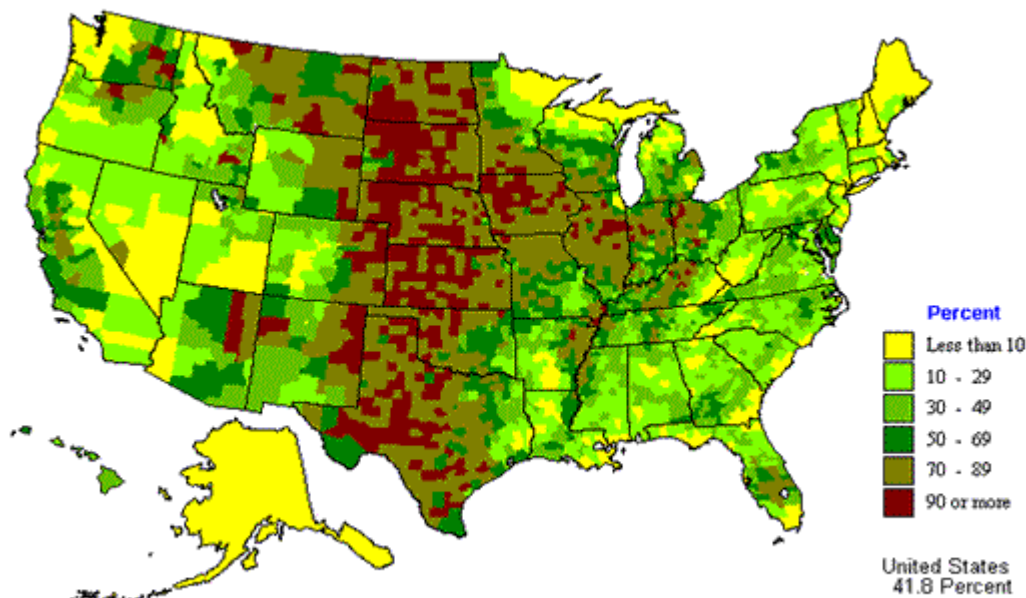
It’s hard to text, but I think it is so hilariosssooo!!

Headline – 2029 Agriculture Maps Show Remarkable Change

The US Department of Agriculture has released maps showing the substantial change to agriculture over the last 40 years. Since the price of natural gas collapsed in early 2015 entrepreneurs have been driving the country to the hydrogen economy we enjoy today.

A source from the Ag department that declined to be named, speculated that the intersection of corporate farming, cheap ammonia fertilizer, and the speculative land grab of the 2010's all came together with shifting inland rains to make the productivity of the American breadbasket surge in a second Green Revolution. While coastal farming has largely been wiped out by now so common brutal storms and surges the violent change in the climate has smiled on the Great Plains and allowed much more intensive and productive farming. Even with more frequent storm losses the Great Plains are so much more productive that the US is once again the breadbasket of the world. Few countries are holding out against GMS (Genetically Modified Seed Plants) as the climate change has been less friendly to population centers across the world.

Land in Farms as Percent of Land Area: 1992

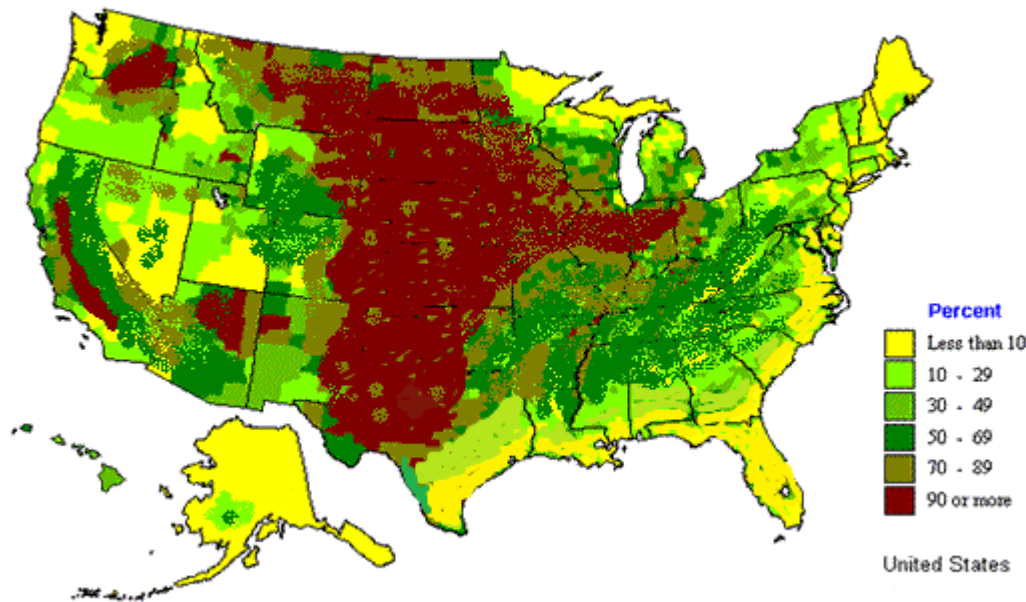


Source: 1992 Census of Agriculture

Figure 1 shows the US Agriculture map of the early 1990's. Figure 2 is based on the latest (2029) preliminary estimates.

Figure 1

Land in Farms as Percent of Land Area: 2029 :



Source: Census of Agriculture

Figure 2

The family farm is all but a relic, but agriculture booms in America today.

Coasty Blog:

Dad is such a loser. We are running from this storm without our trailer! He rented the trailer to the Blown Away! Tourist company so that a couple of inland vampires can stay through the storm in it. I put all of my stuff up, but left all my clothes dirty in the drawers in case they pry. No doubt our trailer will hold up, and the surge maps are pretty good, so they should drown (I WISH!) but it is creepy to think that someone is staying in my room. Ughhhh!!!

Haikus at the airport in Gulfport:

Open sewer
Floating ball of ants
Red Cross debit card on zero

Pistol fire
Hurricane destruction
No power tonight

Notes:

Coasty Blog:

These are selected excerpts from the “anonymous” blog of a coastal nomad – the persona adopted seems to be an adolescent with some very adult ranting and candid observations. The blog has been very successful; bitter commenting from both sides of the increasing social divide are recorded and left out for all to see – Google ads has recently acquired ad rights and the blog is now fully monetized – some say “sold out”...

Grapes of Wrath?

The Joad family moving to California...

The Unseen: resourceful, motivated by frugality and concern for livelihood, Often found within gray markets and the informal economy dependent on social capital and community for survival. {Misfit innovators}.

