RTC-TH May 2012 Update2

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Community-based environmental education for the self-sufficiency and sustainability of small rural family farms

ชุมชนตามสิ่งแวดล้อมศึกษาเพื่อการพึ่งตัวเองและยั่งยืนชนบทขนาดเล็กครอบครัวฟาร์ม

You may post questions / comments to the Discussion area of our website

www.neighborhoodlink.com/org/rtcth E-mail: rtc2k5@gmail.com

Food for the Future

By 2050 the world's population may reach 9 billion. Experts estimate we will need 70% more food to feed them. The systems and policies subsidizing fuel and agriculture today are unlikely to effectively meet the challenge. We need alternative ways to plant, water, harvest, transport, store, own, sell, and share food. There won't be a single "correct" answer to all these problems. Given the different cultures, diets, and economies, the most effective solutions may be locally based.

Challenge: How to produce 70% more food by 2050

Rice is the staple food for about 3 billion people today. It takes about 5000 L of water for 1 kg of rice. In a world short of water, alternatives are clearly needed.

It begins with farmers interacting with their local environment to optimize crop production. Every farm is characterized by its climate, topography, soil, water resources, indigenous and introduced people, plants and animals. Food production centers on climate, soil, and water. Climate change affects each place differently. While some places get warmer, others may get cooler; some places wetter, others drier.

Knowledge is the first line of defense. So communities need be begin gathering weather data to monitor the local changes. More farmers need to learn to observe and record weather data. This is especially true for 3rd world farmers. The RTC-TH Applied Geography lesson on GROW (Getting Real On-farm Weather) found at www.neighborhoodlink.com/RTC-TH_Tech/pages contains information on making low cost weather instruments.

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Salvaged Farm House

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Many urban areas are unsustainable relative to water and food resources.

Experts expect that in 2050 about 70% of the people in the world will live in urban areas (at the start of the 21st century, the estimate was 50%). When you consider that most urban areas are largely unsustainable, this points out the vulnerability of urban centers to the danger of infrastructure failure or supply line disruptions. Even if things work smoothly, the impact of rising fuel costs on transportation leads to cascading price increases from farm to fork.

Some people are starting to think urban areas need to begin planting and growing more food via roof top gardens, window / balcony boxes, and community gardens. This calls for a major shift in urban planning policy, cultural attitudes, and water resources management.

What Can You Do?

If you have a yard, we encourage you to check on local regulations and begin to harvest rain water. Learn how to treat it so you have safe drinking water for emergencies. Stock up on the necessary items and supplies to treat rainwater for drinking. If local laws prevent you from harvesting rain water, you should "store" water in the soil and start small garden beds (e.g. square foot gardening). Think about it; many animals get their total water supply from the food they eat. Some of your daily water need can be met the same way.

A simple urban rainwater collection barrel with a tap to easily use rainwater to water a garden

City dwellers can grow vegetables on a balcony or in window boxes.

If you live in an apartment, consider using balcony and window space for container gardening. You may not be self-sufficient, but you can supplement your diet and cut food costs. Another option is to join or start a community garden in your area or a coop to buy food.

You know your situation best. This is the time to get creative. There are plus/minus factors to any decision you make. But the key point is you have choices and need to decide what you are going to do for your future.

You cannot assume that major infrastructure and supply systems will always be there or get repaired quickly IF / WHEN they fail. The best case scenario is that you are prepared but don't need to use it. Having garden fresh produce is a big bonus for all your efforts. In the long run, that will be good for your health and happiness and that of your family.

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2012 Rainfall Score Card & Water Scarcity

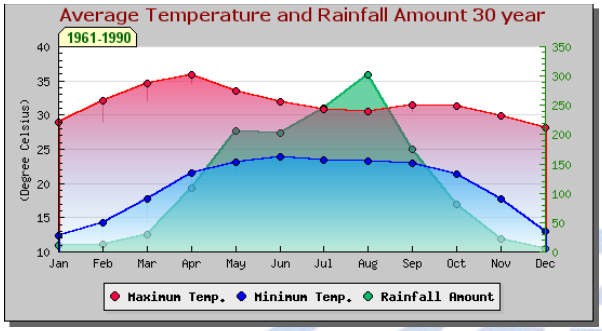

Image from the internet: educational fair use clause

The chart on the left shows the 30 year climate summary for Thawangpha. The table below shows the numerical data (e.g. average rainfall and number of rainy days for each month) for the 30 year average (climate summary), for 2011 and the score card for 2012. The April data have been posted to the score card.

	30 Yr Average		2011		2012	
Month	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days	Rainfall (mm)	Rainy days
Jan	11.0	2	1.52	3	17.78	3
Feb	12.6	2	14.48	2	1.01	1
Mar	29.2	3	69.33	6	31.24	2
Apr	108.0	9	98.55	10	163.32	8
May	206.2	17	208.53	22		
Jun	202.4	17	396.20	17		
Jul	244.1	21	340.87	19		
Aug	302.3	22	321.05	18		
Sep	175.6	16	371.08	20		
Oct	80.4	9	147.57	7		
Nov	22.7	4	8.12	2		
Dec	5.9	1	0	0		
Total	1400.4	123	1977.3	126		

Blue Box = northern Thai SW Monsoon Season
Green shading = data above 30 year average for Thawangpha
Red shading = data below 30 year average for Thawangpha

So far, 2012 began with more than 11 X the normal monthly rainfall. That was followed by 2 months of below average rainfall totals. A drought was declared in Nan Province. Up to April, the number of rainy days in 2012 is less than the 30 year average. Yet the accumulated total rainfall for the first 4 months of 2012 is 52.55 mm above the 30-year mark for the same period.

We have very little access to irrigation water. We depend on direct rainfall and ground seep from our watershed to get water in the fish ponds to supply our rice paddies. We increased our rainwater harvesting effort by adding storage tanks to our farm. Thailand has a long tradition of rainwater harvesting. In the US, many western states laws on the books for 100+ years against "diverting water") but never enforced them. Recently some states began to dig up and apply these laws to control the water rights.

Thai Meteorological Dept, Thawangpha Office

Citizens are taking steps to fight this trend. At the federal level, there is NO government agency dealing with this issue. So this falls under state law. The laws are being challenged. The situation is "fluid" (pun intended). Use www.harvesth2o.com/statues_regulations.shtml to find out the relevant law in your state,

For many farmers in developing countries, rainfall is their primary source of water for their crops. If collecting and using rainwater is prohibited, who can grow food? Unfortunately, many poor rural farmers are often marginalized and isolated from the politicians and decision makers that affect water management policies.

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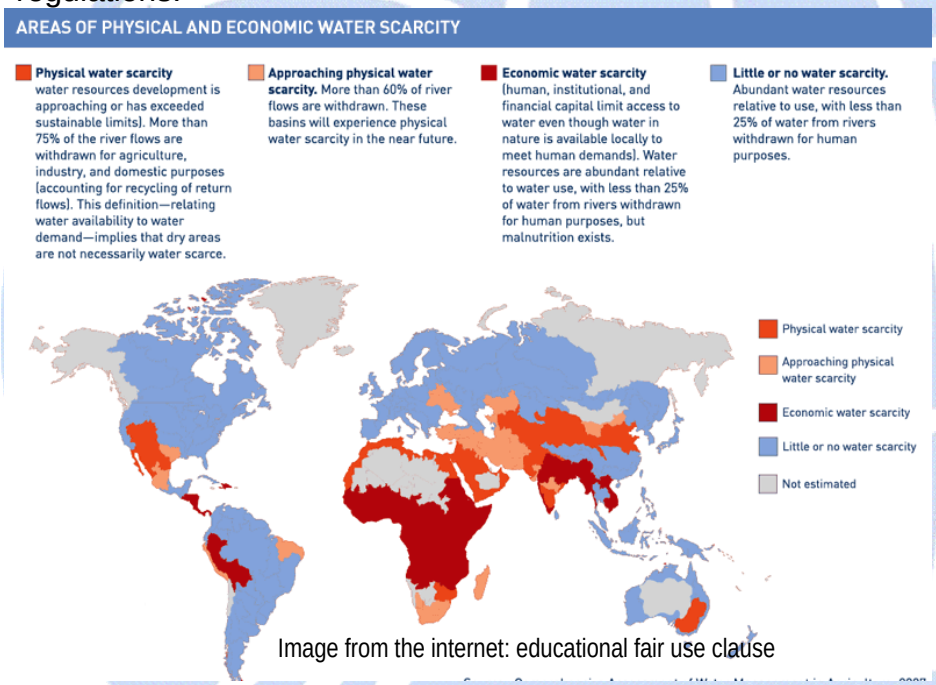
Water resource management has taken on a multi-national corporate cloak and privatization of water has already occurred. In some nations the issue has gotten to a point where impoverished farmers cannot collect rainwater to drink as the water rights were sold by the government to a private corporation. In our opinion, something doesn't quite seem right when you cannot collect rain falling from the sky.

In anticipation that the privatization trend could reach Thailand, it seems more imperative for us to protect the forest watershed above our farm and to do all we can to increase the soil moisture retention on our farm. We are hoping that rain falling on the ground would not be deemed "collecting" or "diverting water" as gravity is a natural process. It is not something we control.

It behooves all of us to be vigilant regarding legislation and government action that might preclude our access to rainwater. Many people may be unaware of this pending issue. You can start to process by asking your friends and neighbors how much they would be willing to pay to use the rainwater that falls on their land or roof. Then get them to visit the harvesth2o website to learn the status of their local regulations.



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Globally you can see the areas with actual and economic water scarcity. Added to this the stress of climate change and extreme weather events. You can get an idea of where poverty and famine could break out.

The growing world population will put more pressure on water scarcity. To boost agricultural production farmers will need more water. Recent studies reveal much of the food grown today uses water from non-renewable resources. This makes some of today's agriculture unsustainable as it uses water that cannot be readily replenished by natural cycles in a human lifetime. People need drinking water on a daily basis. Severe water shortages can quickly lead to civil unrest and chaos. Conflicts between upstream and downstream users are likely (and in some cases already exist). Whether they lead to war or not remains to be seen. If water scarcity doesn't cause wars, it will be a big lever between "have" and "have not" nations.

Individual farmers should look at their farm in the context of their environment using the Geographic Systems Model. They should identify all water resources in their area and determine what they can do to protect their watershed. On the farm, they need to mulch / compost and increase the soil moisture retention capacity. They should also grow crops with lower water demands and be willing to adjust their dieta accordingly. The sooner we start addressing the issue of water scarcity, the better we can prepare and be prepared.

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Water Policies, Natural Resource Valuation, Humanure

At the Global Water Summit 2012 conference in Rome (Apr 30), Reuters reported Mihir Shah saying "India had reached a plateau in terms of water resource exploitation, with few options for the construction of new dams, and ground water also depleting." The Indian government asked Shah to create a new water resource strategy that would be "more sustainable, efficient and focused on how water is used and how it reaches people."

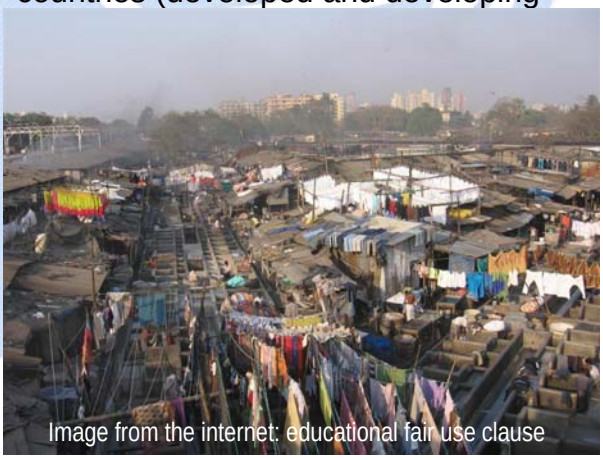
Drought and rural poverty go hand in hand in India

It seems the Indian government has realized water resources are the key to India's future growth. Water shortages can lead to issues that "become very serious and a threat to the democratic fabric itself" states an Indian government report. We think water is pivotal for the social, economic, and political stability of any nation.

In urban slums ~ 16% of the people get clean water

The International Monetary Fund (IMF) sees India's growth will be down to 7% for this year from the 8.4% levels of the past 2 years. India is one of the fastest growing economies in the world. As with most resources on Earth, uneven distribution means millions lack clean drinking water, sanitation facilities, and live in poverty in rural areas and urban slums.

The rural vs. urban water conflict in India is similar to the situation in other countries (developed and developing alike). Water for agriculture is the main rural use. Water for industries, living, and sanitation are the main urban uses. As more and more people migrate to cities where industries are concentrated (along with money and power), there will be less water for agriculture. Yet agriculture is the source of food for the cities and the nation. [**Remember:** By 2050 they estimate 70% of the world's people will be living in urban areas. For many developing countries, urban slums will be expanding.] ***Hold this thought.***



Urban slums: water scarcity is already an issue

The World Bank is also calling on nations to put "a monetary value on natural ecosystems is a key step on the road to 'green' economic growth". It seems many people see natural resources (e.g. air, water, water sheds, etc.) as essentially "free" for the taking.

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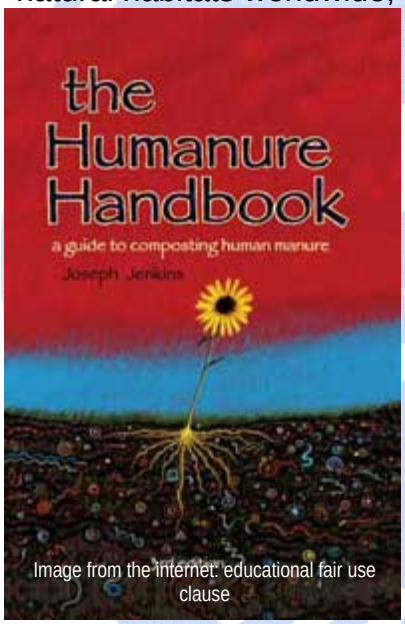
At the RTC-TH we see this as similar thinking applied to volunteers. Many organizations see volunteers as a source of free labor. And in economic terms, "free labor" means unpaid labor that translates to lower production costs that ultimately help boost the "bottom line." The perversity of this approach is volunteers are then perceived as being "worthless" (i.e. without value because they were "free" of monetary cost). It is hard to put an undisputable monetary value on some natural resources. But when an item has no perceived monetary value, it is easy to overlook its importance. Unfortunately, this attitude applied to natural resources often means the rape of the land and exploitation of the resources. That leads to ecological imbalance and the loss of habitat and species. Ultimately it may also signal our demise.

The status quo measures national economies in terms of GDP (Gross Domestic Product) and % of annual growth. A review of the past several decades of GDP and growth of the developed nations shows this system is not sustainable. And as resources and supplies diminish, things begin to spiral out of control.

The Geographic Systems Model and the basics of habitat show all living organisms need shelter, water, food, and space. Resource exploitation has severely impacted natural habitats worldwide, and may be threatening our survival. ***Hold this thought.***



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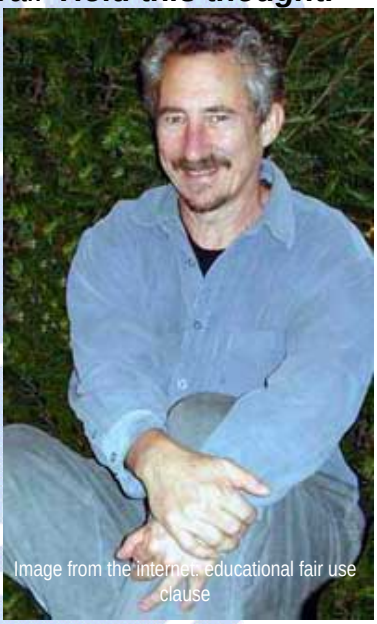
Joseph Jenkins challenges conventional thinking about human waste disposal, sanitary sewers, and wastewater treatment. He can find no good reason why billions are spent to purify water only to have people pollute it with human wastes in modern toilets. His approach is to use waterless composting toilets to recycle nutrients in human wastes for use in agriculture.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For the two + decades, he has successfully composted human wastes on his family farm. Laboratory tests prove no pathogens survive the composting process. He and his family used the compost in the family garden, harvested the bounty of the garden, and ate it with no one getting sick from the garden fresh produce. [**Note:** Reporters have visited the Jenkins farm and literally stuck their noses into his composting toilets and humanure compost piles and did not get the repulsive stench of human waste they expected. They were pleasantly surprised at the lack malodor and flies.] ***Hold this thought.***

Bring Them All Together

We are short of fresh water. We cannot make more water that is affordable to the developing world and rural farmers. We need to protect water sheds and ecosystems to help protect existing water resources. We also need to grow more food to feed more people. To do this we need more water and better soil (especially in the developing and under developed world). Humauring is a way to save a tremendous amount of water and boost soil productivity to help feed the world. Humanuring can be done today on millions of small rural farms around the world. All that is needed is the knowledge to do it. So help spread the word.

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Climate Change and You

Direct rainfall: water supply for 3rd world farmers

Strategic thinking on water and climate change points out the probability that with agriculture using 70% of the world's fresh water supplies, a reduction in water will see a reduction in agriculture. Some people see water infrastructure projects will become important terrorist targets. Dams, aqueducts, pumping stations, desalinization plants are high profile "targets".

We are fortunate. Our farm is not dependent on any water infrastructure system. We depend on direct rainfall. Climate change impacts to the natural rainfall mechanisms (e.g. El Niño / La Niña, SE Monsoon, etc.) will have a big impact on us. But that's beyond our control.

Our future farm water supplies depends on protecting the watershed for the farm, increasing rainwater harvesting/storage capacity, increasing soil moisture retention, and shifting to grow more drought and heat tolerant crops.

The terrain provides a natural watershed for our farm which relies on direct rainfall for its water supply.

It is a moot argument for 3rd world farmers to debate the causes and possible mitigations for global warming. There are some actions they can take to reduce their impact on the environment. Shifting from burning wood to solar cooking as much as possible is a good first step. Planting and caring for trees can help create micro-climates that can lead to intercropping and growing food for self-sufficiency. Rain water harvesting, drip irrigation, and mulching / composting to enhance soil moisture retention. These are all relatively low cost, low tech actions many people can take immediately that affects their food growing capacity.

Family planning also plays a role. With world population on the rise, especially in developing countries, slowing population growth may make the difference when trying to find a balance with food production / security and economic, social, and political stability. Consider what happened a few years ago when food prices rose sharply and caused civil unrest as people were unable to afford to buy food. Modern life can be easily disrupted when supply chains are broken.

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Local Elections Are Noisy

Only 3 pieces of campaign materials in our mail.

It's time for Thawangpha municipal elections, and a good opportunity to point out some differences between life here and the US. I recall election time in Los Angeles being a blitz of TV/radio ads, my mailbox overflowing with campaign flyers, and signs and posters sprouting up like weeds. It is quite a difference in Thailand.

I don't watch Thai TV very much so I can't say I have been disturbed by many TV campaign ads. There's very little in the mail. The most important item was the information booklet about the election procedures (yellow circle in the photo on the above).

The sound truck is the backbone of a campaign

The most noticeable difference in Thai campaigning is the sound truck. A pick up loaded with campaign signs and horribly loud speakers and an amplifier drive extremely slowly along the highway and through neighborhoods blaring out ads for the various parties and candidates. Some play catchy songs between the shouted ads. This can start as early as 6 am!!

I happen to like peace and quiet, so these trucks are exceptionally loud to me. On a more objective level, I think you might find the noise level akin to being at a rock concert where if you can't hear the music due to blown out ear drums. But you can certainly ***feel*** the acoustic pressure waves pounding your body. I didn't see the drivers wearing any hearing protection. They could have been wearing smaller ear plugs, or they could have already been deaf from previous campaigns.

Thank goodness voting takes place tomorrow. Then these trucks will be gone for a while. After these pass couple of weeks campaigning, the roar of regular traffic will seem like pure solitude again.

Some come with an onboard announcer

Others seem to have a taped message loop.

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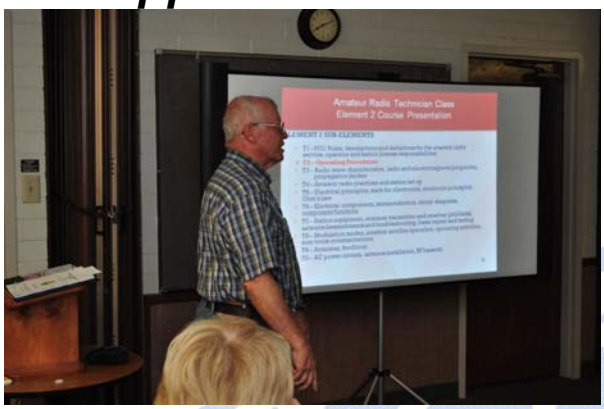
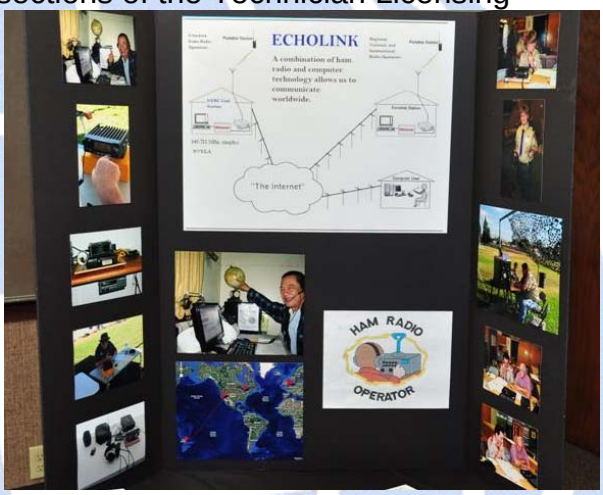
Support for GERC Tech License Training Class



GERC hams volunteer and teach sections of the FCC amateur radio Technician Class License course

In the second half of April 2012, GERC held a training class for people wanting to get their FCC amateur radio Technician Class License.

Both Mark (N7YLA, GERC founder) and Greg are retired professional educators. In their experience, one of the best ways to learn something is to try to teach it to others. In the RTC-TH, the "teach back" is used in place of formal exams. Mark got other GERC members to volunteer to teach about different sections of the Technician Licensing exam. This also ties into a long-standing ham radio tradition called "Elmering" (when an experienced ham helps a novice).



The GERC EchoLink® display features the RTC-TH

We have consistently supported GERC and especially Mark (N7YLA) in an effort to "give back" to him. He got us involved in amateur radio. Proof of our support is seeing the RTC-TH prominently featured in a GERC display about EchoLink® during the class.

The recent entry of PR China made low-cost dual band HT (handi-talkies) radios to the US market lowered the cost of a first radio about 50% of a basic VHF radios from the "big" name brands. Mark wanted to introduce the collaborative lesson we made about buying their first HT. Mark gave an introductory presentation of the RTC-TH/GERC collarborative lesson and gave students a copy on CD to take home. The entire lessons series is available on the RTC-TH and GERC websites (see the links below). We like empowering the future new hams to get their license and first radio quickly. Without these, they can't get on the air and become active radio operators.

Attentive GERC Technician License class students

We don't advocate any particular make/model of radio. That's really an individual choice. But we want people to be fully aware of the choices available. That is a moving target because the technology changes rapidly. Rather than stressing the "content" or radio specifications, we focus on teaching people the process of identifying their operational interests, styles, and goals to select their equipment. GERC also has community service activities for them to practice using their radios.

RTC-TH website: www.neighborhoodlink.com/RTC-TH_Tech/pages GERC Website: www.neighborhoodlink.com/org/gerc

Photos courtesy of GERC

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Clouds: Atmospheric Art

No, we don't use non-prescription "street" pharmaceuticals. We just get "high" on sky. Our curiosity and interest in weather observing causes our gaze to natural-Lee turn to the sky. Curiosity and imagination are powerful engines of learning and empowerment. Sometimes it seems modern technology and videos sidetrack young minds from developing these basic mental aptitudes.

The real-Lee good things about cloud watching: it's free. Anyone can do it anywhere and at any time.

A pooped puppy resting cloud bed

A turtle riding on a bear past a prairie dog.

Lady sunbathing on a reclining cloud chair.

A wooly cloud ram.

Cloud gazing can be a great way to reduce stress in your life. Clouds can carry your cares away. There's never dull moment and there's no right or wrong to what you see, either. You might see something in a cloud and then in a matter of seconds it morphs into

A jeweled cloud hummingbird.

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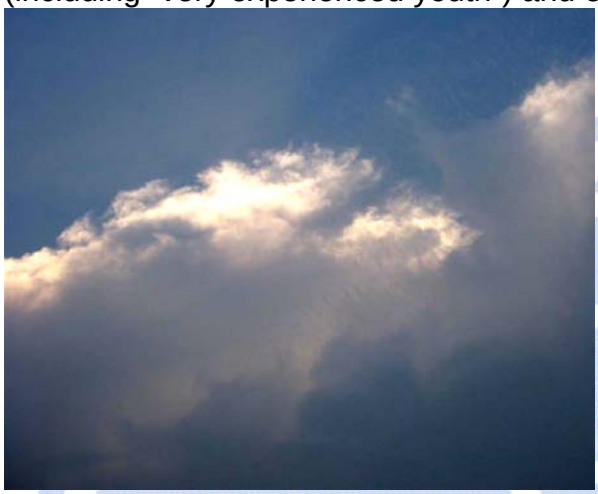
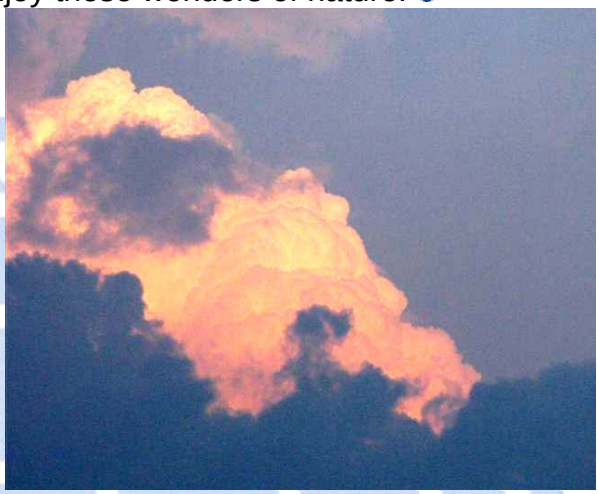
something else. So when your friends want to disagree, NAP (not a problem). Just tell them "aww, too bad, you missed it! It was there a second ago!"

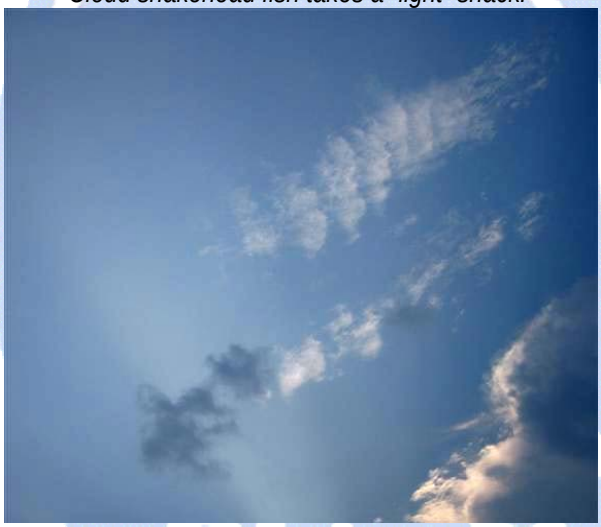
If these photos help to fire up your curiosity, imagination, and enjoyment please share them with others. Do a good deed and spend some time with a young person (including "very experienced youth") and enjoy these wonders of nature.



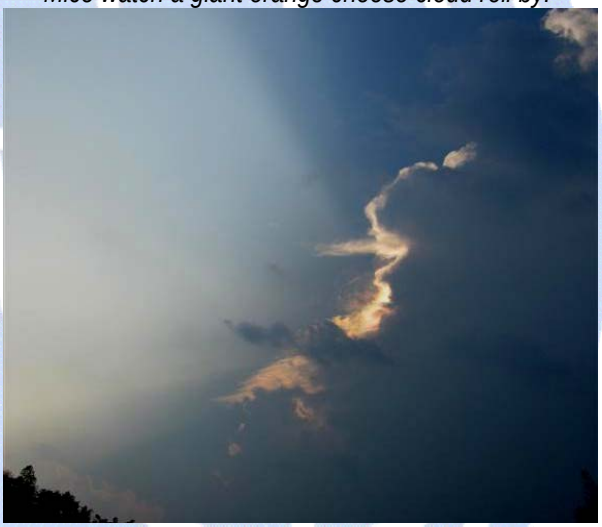
Cloud snakehead fish takes a "light" snack.



Mice watch a giant orange cheese cloud roll by.

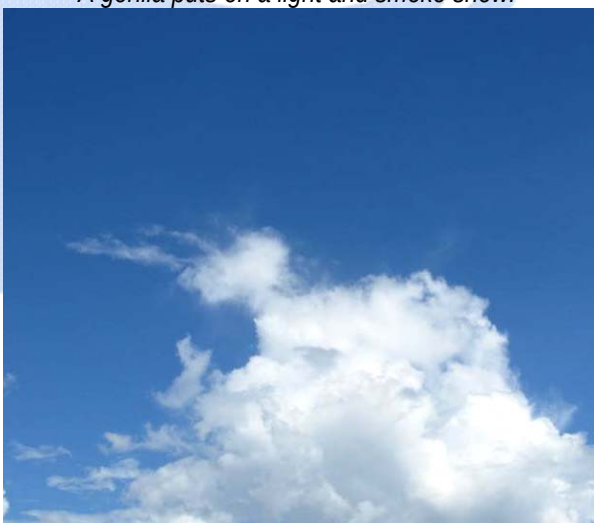


A pair of cavorting cloud Koi.



A gorilla puts on a light and smoke show.

A Chinese fire-breathing dragon cloud.



A little bird found a giant bug or the bug found a bird.

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Some Photos from RTC-TH Fans

Harvey exercising with his new wheelbarrow.

Harvey Overhuls found our website a few years ago. He emailed us regarding composting and has become an RTC-TH fan. Locals in his area of Sri Saket Province (near the Cambodian border) fondly call him "Mr. Blue Pipe" for his extensive use of PVC in his gardening projects.

He makes extensive use of mulch and compost, EM bacteria, and practices rainwater harvesting and drip irrigation. He has terraced his garden and is concerned with the loss of trees in his area.

Harvey lives in NE Thailand. This is the drier part of the country. The climate here is less than ideal for farmers. Often drought is present. He's turned to compost and mulching to boost soil moisture for his plants. He tries to stretch his rainwater harvest by using drip irrigation.

From the looks of it, his dragon fruit plants are lush and health. We can't take any credit for any of this. It's Harvey's diligent information quest and hard work implementing any information he's gleaned from our web site. Hat's off to Harvey. Keep up the great work!

Harvey is in NE Thailand; an arid region. Dragon fruit with a thick compost layer and mulch at the ready.

Another loyal RTC-TH fan is Cliff Savage. Cliff was a former student of ours in southern California. He went to a community composting workshop for extra credit. Cliff took composting seriously and converted 2 empty lots to gardens. He is now in Tennessee and continues to be very active in composting and gardening. He came up with a quick effective way to aerate his compost piles. His quality garden vegetables attest to the quality of his compost. Cliff has surpassed our composting knowledge and abilities and now we learn from him. Talk about teach backs!

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