

February 2010

# Austin Sierran

Vol. 41, No. 1

Newsletter of the Austin Regional Group



*Sandhill Crane. Photo by Melody Lytle  
([www.karenmelody.com](http://www.karenmelody.com)).*

## *General Meeting*

Texas State Teachers' Association  
auditorium, Lavaca and 12th Street

Tuesday, February 2nd, 7 p.m.

Program: "Peaks Everywhere"

Speaker: Tad Patzek, UT Petroleum and  
Geosystems Engineering Dept.

Tuesday, March 2nd, 7 p.m.

Program: "Into the Wild"

Speaker: Becky Patterson and Austin  
Sierra Club Outings Leaders

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## Sierra Club General Meetings

Texas State Teachers' Association auditorium, Lavaca and 12th Street, 7 pm

### **Tuesday, February 2nd -- Peaks Everywhere? The Future of the Energy Supply for the World**

**Presenter: Tad W. Patzek, Chairman of the Petroleum and Geosystems Engineering Department at UT Austin**

Tad Patzek is the Lois K. and Richard D. Folger Leadership Professor and Chairman of the Petroleum and Geosystems Engineering Department at The University of Texas at Austin. He also holds the Cockrell Chair #11. Between 1990 and 2008, he was a Professor of Geoengineering at the University of California, Berkeley. Prior to joining Berkeley, he was a researcher at Shell Development, a research company managed for 20 years by M. King Hubbert of the Hubbert peaks. Patzek's current research involves mathematical and numerical modeling of earth systems with emphasis on fluid flow in soils and rocks. He is working on the thermodynamics and ecology of human survival, and food and energy supply for humanity. His current emphasis is use of unconventional natural gas as a fuel bridge to the possible new energy supply schemes for the U.S. Currently, he teaches courses in petroleum engineering, hydrology, ecology and energy supply, computer science, and mathematical modeling of earth systems. Patzek is a coauthor of some 200 papers and reports, and is writing five books.

### **Future Meetings**

**March 2 — Into the Wild: The Austin Sierra Club's Outings Programs**

**Presenters: Becky Patterson, Outings Chair, and Outings Leaders.**

**April 6 — What Have We Done? The Great North American Beetle Pandemic**

**Presenter: Bruce Melton, Civil and Environmental Engineer, Researcher, Land Development Consultant & Green Builder**

**May 4 — Are We Winning the Battle to Save Barton Springs?**

**Presenters: Bill Bunch, Executive Director, Save our Springs Alliance; and Lauren Ross, Environmental Engineer and Owner of Glenrose Engineering, Austin**

For more details: <http://texas.sierraclub.org/austin/>

*Last Chance!*

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Please mail checks (including \$3 for mailing) to:

Chuck Byrd, 4207 Iriana Bend, Austin 78749.

They will also be available at the February general meeting

## Chair's Column

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CHRIS LEHMAN

### *Another Hybrid on the Road*

Slowly but surely I continue to try to reduce my carbon footprint. As much as I appreciate how greenly my Subaru was made, I have now replaced it with a Ford Fusion Hybrid. Although any car buyer is bound to do their own research and test drives, I'll share my experience and thoughts here. I would have preferred a 5 passenger hatchback/ wagon hybrid, but that wasn't really available. After many years in a small SUV, I was never going back to something like an Escape Hybrid. But please note that **Cyrus Reed**, conservation director of the **Lone Star Chapter** of the Sierra Club, loves his Ford Escape Hybrid. The Prius remains the mpg champion and I know many of you love yours. The 2010 Prius's promise of 50 mpg and hatchback utility makes them virtually irresistible. But it is a little too compact for me at this time.

For various reasons I went the slightly upscale Fusion Hybrid vs Camry Hybrid route. Rather than list all of the specific performance and dimensional differences here, I'll recommend Consumers Union and their online Car Buyer's Guide. For less than \$20 it provides dealer invoice information that is well worth a car buyer's investment.

After all the general specification comparisons, the highlights for me were the miles per gallon, cabin quietness, handling, and driving experience. And surprisingly, one car won all four categories. The recent quality issues with Camrys helped me overcome my fear of Ford reliability, but differences in build quality are evident, with Camry winning the assembly workmanship contest. Ford had an initial, minor defect (the letter "Y" was missing in the word Hybrid on the rear of the vehicle). Where the Ford Fusion Hybrid surprised me was in more important ride quietness and handling. Changing lanes in the Camry was a sort of two stage process. First the undercarriage responded to your steering and then the body twitched to catch up. The Ford Fusion moved as one. Published reviews also favored the Fusion's handling and emergency maneuvering. I also felt that the Fusion was a quieter ride.

The hybrid technology engineering strategies intrigued me because they differed considerably. The Ford Fusion exploits its ability to run up to 47 mpg on electric power only to develop higher city mpg than highway. While the Camry's EPA estimates were 33 city/35 highway the 10 percent heavier Fusion EPA estimates were 41 city/36 highway. Again, published reviews saw the Fusion Hybrid doing better on mpg than the Camry Hybrid in actual road tests. On one 12 mile out and back test drive on IH 35 I averaged 44 mpg. Seems a fluke now, even though that trip included equal distances in both directions because my mileage has not been that high on average since I bought that same car.

While driving fun usually means pedal-to-the-metal gas-guzzling tom foolery, I found myself more fully engaged in the mpg game in the Fusion Hybrid than the Camry Hybrid. While both offer enough displayed feedback on their dash boards to educate a driver on optimal driving behaviors, the Fusion Hybrid tries harder. Both offered instantaneous and cumulative mpg data, but I was getting more detailed feedback from the Ford Hybrid. I admit I enjoy watching leaves and vines grow on the dashboard LCD when I drive more efficiently, and I also appreciate the variety of driver selectable displays available in the two 4.3" LCD displays that bracket the speedometer. The Fusion offers me instantaneous feedback as to how much more Electric Vehicle (EV) power is available and is teaching me how gently I need to accelerate to exploit that EV mode.

I am also learning to own the carbon footprint of other drivers who grow frustrated when I try too hard to stay in EV when the traffic around me has better things to do. It's a rookie mistake and initially I got too focused on instantaneous mpg until I realized how it was affecting others. Slow acceleration does get better mpg, but I will not ignore how I inconvenience and aggravate others, and I will find that happy medium between pushing the pace downward and keeping the peace. If I am alone on my side of the road and there is no one in oncoming traffic or side streets waiting for me to pass so they can turn, I may allow the slower acceleration necessary to stay in EV. Other times I find EV is available in sufficient capacity to allow EV only to maintain my speed on relatively flat terrain, even staying within the flow of adjacent traffic. It is very rewarding to see the 60+ mpg displayed. That is the maximum displayed and means as much as zero gasoline or 100+ mpg.

Hats off to Dave Holloway, Dick Kallerman, Philip Russell, Kedron Touvel, Roy Waley, Travis County Commissioner Sarah Eckhardt, and all the rest of you who win this game hands down by walking, bicycling, and taking the bus as often as possible. I may have halved my carbon footprint. You have buried it!

**Volunteer of the Month  
December**

**KATHY THOMAS**

**Great job !**

## Conservation Column

TERRY MOORE

### *Next Steps Post-Copenhagen at the Global and the Local Level*

#### Summary of the Copenhagen disaster

As we shake our heads and tell each other what a poor job is being done by diplomats and political leaders, it is easy to overlook the fact that there have been some interesting changes. I for one had not previously heard of the term "BASIC countries" (Brazil, South Africa, India and China). In my Google for that phrase I see items dated November and December 2009 only. I also see a similar term "BRIC Countries" (Brazil, Russia, India and China) that Wikipedia tells me was coined in 2001.

It appears to me that the negotiation process created in the 1990's that lead to the Kyoto protocol are evaporating, and it is being replaced by.... well it is not yet clear what may replace it.

A January 5<sup>th</sup> blog posting by Ann Danylkiw sounds right to me. It is titled "Mexico City Offers Clearer Setting for Next Climate Conference" (see <http://solveclimate.com/blog/20100105/mexico-city-offers-clearer-setting-next-climate-conference>). She points out that "EMEs" (Emerging Market Economies) will be the group on which a new climate deal will hinge.

Climate deniers and fossil energy lobbyists may be slapping each other on the back in delight over the Copenhagen failure, but their next-quarterly-results myopia is not serving them well. The clean energy businesses of the BASIC, BRIC and even EU countries will be putting these US oil-and-coal-lovers in their rear view mirrors as they speed past in the 21<sup>st</sup> century fast lane.

#### Next Steps for Climate Science

As you may know the IPCC (Intergovernmental Panel on Climate Change) issued its Fourth Assessment Report in 2007. The fifth – called AR5 - is due out in 2014 (the previous three reports were issued in 1990, 1995 and 2001). During 2009 lead authors of AR5 agreed on an outline for the report, and next steps include selecting all of the other authors from experts nominated by governments. Each of the Working Groups will begin their writing process in late 2010 or early 2011.

In the meantime, there is a lot of activity on SRREN ("Special Report on Renewable Energy Sources and Climate Change Mitigation") due out at the end of 2010. Its First Order Draft was due in December 2009, so most of 2010 will be spent dealing with comments and gaining approvals before it is released. For details see <http://www.ipcc-wg3.de/publications/special-reports>

It is a pity that scientists seem to behave as a herd, sticking together for protection and terrified by the possibility of peer criticism. Our herd of climate

scientists seems to be moving at such a ponderous rate that I wonder if a 2014 carefully-qualified report can have any useful impact on policy-makers. Will the world economy's bumpy ride over peak oil and record-breaking weather events between now and then mean all efforts in 2014 are on tactical self-preservation, salvage and rescue, leaving almost no resources for long-term solutions?

#### Is There Another Path Forward?

I agree with much of the still-relevant position put forward by British authors Gwyn Prins and Steve Rayner. In 2007 they wrote "The Wrong Trousers: Radically Rethinking Climate Policy" as a joint discussion paper for Oxford University and the London School of Economics. At about the same time they published an article in the journal Nature titled "Time to Ditch Kyoto." See <http://www.sbs.ox.ac.uk/centres/insis/Documents/TheWrongTrousers.pdf>

They say that the top-down international treaty concept is doomed and should be replaced with a bottom-up process integrating several solutions. They recommend seven principles:

1. Use silver buckshot
2. Abandon universalism
3. Devise trading schemes from the bottom up
4. Deal with problems at the lowest possible levels of decision-making
5. Invest in technology R&D
6. Increase spending on adaptation
7. Understand that successful climate policy does not necessarily focus instrumentally on the climate.

#### National Sierra Club Action Opportunity

Go to the Big Picture web site for up-to-date ways to support climate policy: [http://action.sierraclub.org/site/PageNavigator/adv\\_BigPicture\\_action](http://action.sierraclub.org/site/PageNavigator/adv_BigPicture_action)

#### Local: Austin Energy 2020 Generation Plan

In the November 20, 2009 article in the *Austin Chronicle* by Nora Ankrum titled "AE's Coal Conundrum: Energy planners and the fight over Fayette" we heard about the outcome of the more-than-a-year effort to develop the Austin Energy 2020 Generation Plan. See <http://www.austinchronicle.com/gyrobase/Issue/story?oid=oid:919207>

Here we are in early January 2010 and the Council still has not voted on any proposal, or even scheduled a vote, even though all the parties working on it have supported the AE staff proposal. The Council's next step will be to have a hearing at the January 28, 2010 Council meeting.

The Mayor and Council appear to be hesitating because of business opposition to the modest short-term energy cost increases in the majority-supported

*Continued on next page*



## We Are Selling Indulgences

JAMES HANSEN

Last month's minimalist Copenhagen global climate accord provides a great opportunity. The old deceitful, ineffectual approach is severely wounded and must die. Now there is a chance for the world to get on to an honest, effective path to an agreement. The centerpiece of the old approach was a "cap-and-trade" scheme, festooned with offsets and bribes that purportedly, but hardly, reduced carbon emissions. It was analogous to the indulgences scheme of the Middle Ages, whereby sinners paid for forgiveness.

With today's indulgences the sinners, developed countries, buy off developing countries by paying for offsets to their own emissions and providing reparation money for adaption to climate change. This does

not reduce the amount of carbon dioxide in the atmosphere, which will remain in the climate system for millennia.

The problem is that fossil fuels are the cheapest energy, if the price does not include the damage done to health, the planet and the future of our children. We need a rising price on carbon applied at the source (the mine, wellhead or port of entry). The fee would affect all activities that use fossil fuels, directly or indirectly. The entire fee collected from fossil fuel companies should be distributed to the public as a monthly dividend. It would stimulate the economy and provide people with the means to increase their carbon efficiency.

Cap-and-trade is the antithesis of this simple system. It is a hidden tax, increasing energy costs, but with no public dividend. It is advantageous only to energy companies with strong lobbyists and government officials who dole out proceeds from pollution certificates to favored industries. In contrast, fee-and-dividend is revenue neutral. As the fee increases causing fossil fuels to rise in price, a series of points will be reached at which various carbon-free energies and carbon-saving technologies are cheaper than fossil fuels plus the fee.

The critical requirement is that the US and China agree to apply across-the-board carbon fees. China is very vulnerable to climate change and does not want to be saddled with the problems that attend fossil fuel addiction. Countries refusing to levy the fee could be dealt with via an import duty collected on products from that nation in accord with the amount of fossil fuel that goes into producing the product.

The international framework must define how proceeds from import duties are used to ensure fairness. These funds should be returned to developing countries, but distributed to encourage best practices, such as women's education, population control and limiting deforestation.

Source: *The Guardian Weekly*, January 1, 2010

### Conservation Column

*Continued from page 3*

proposal. You can read about the concerns of the minority group of business leaders at <http://www.austinchronicle.com/media/content/912868/minreportsenario2.pdf>

#### Austin Sierra Club Action Opportunity

Help us convince City Councilors that most Austin residents want them go ahead and vote to adopt the proposed 2020 Generation Plan, rather than shelve everything and take the "do nothing" stance advocated by a few clean energy opponents. You can help make a difference in Austin today! Send a letter to Austin City Council asking them to pass the Energy Plan with the Task Force Recommendations.

Send your letter to: <http://tinyurl.com/yg9ueuz>  
And join the Clean Energy for Austin coalition at [http://cleanenergyforaustin.org/join\\_us.html](http://cleanenergyforaustin.org/join_us.html)

With the retirement of Roger Duncan on March 1 and Karl Rabago stepping into his shoes to run Austin Energy, let's push the Council to vote for the AE 2020 Generation Plan before the changing of the guard, and give Roger the send-off he deserves.

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**Deadline:** all newsletter contributions must be submitted by THE 5th OF THE MONTH either:

- 1) by e-mail to [judithclarkson@att.net](mailto:judithclarkson@att.net) or
- 2) mail to Judith Clarkson, 2102 New York Ave, Austin, TX 78702; (512) 495-9207.

# *Reducing Global Warming by Contraction and Convergence*

JUDITH CLARKSON

Contraction and Convergence is a framework for reducing global emissions of greenhouse gases that contribute to global warming. It is based on the principles of equity and survival. It depends on the contraction of total global carbon emissions and the convergence of per capita emissions across the global population. In contraction, the total annual emission of greenhouse gases reaches a ceiling, and then gradually drops.

The convergence mechanism facilitates the distribution of emission entitlements across the world to converge on equality. At the end of the convergence period countries receive entitlements in proportion to the size of their population. Developed countries are the first to make large cuts in their emissions levels, whereas developing countries are permitted to keep increasing their emissions levels for a period before also beginning to cut them.

One of the advantages of Contraction and Convergence is that it allows for flexibility in its planning – the model can be employed with a variety of results, according to the atmospheric concentration of CO<sub>2</sub> that it permits and the date by which convergence should occur.

The Climate Justice Project believes that the level at which the concentrations of greenhouse gases must stabilize is much lower than most estimates suggest – if atmospheric concentrations of CO<sub>2</sub> stabilize at 550 ppm, as suggested by the IPCC, we run the risk of entering a phase of runaway “climate feedback”, where one change sparks off another with unpredictable results. They believe that any mea-

sures taken on this incredibly serious issue should err on the side of caution, and that we should aim to stabilize atmospheric concentrations of CO<sub>2</sub> at 350-450 ppm.

It will not be easy to reach these targets – for the UK, individuals will have to cut their individual emissions by between 60 and 90 percent. However, we must do something – and they believe that Contraction and Convergence gives us the best chance of survival. The implementation of Contraction and Convergence will help each individual to think about their energy usage year on year. The end goal is that every individual in the world will be entitled to emit the same amount of greenhouse gases – at a level much lower than today’s, in most countries.

Lord Smith, chairman of the Environmental Agency in Britain, has said that rationing is the fairest and most effective way of meeting Britain’s legally binding targets for cutting greenhouse gas emissions. People would be given a “carbon account” and a unique number that they would have to submit when making purchases of carbon-intensive items such as petrol, electricity or airline tickets. As with a bank account, people would receive statements showing the carbon weight of each purchase and how much of their ration remained. If they used up their ration within a year, they would have to buy extra credits from those who had not used their full allowance. Lord Smith believes that rationing would be fairer than taxing carbon because extra taxes could make certain activities, such as flying, too expensive for people on low incomes. In addition, it would reward those who lived frugally and did little traveling, enabling them to make a significant profit from selling their unused credits.

Under the Climate Change Act, Britain is obliged to cut its emissions by 80 per cent on 1990 levels by 2050. This means annual CO<sub>2</sub> emissions per person will have to fall from about 9 tons to only 2 tons (per capita emissions in the U.S. average 20 tons). Rationing would make it much easier to meet the target because the total amount of permitted emissions under the Act would simply be divided by the size of population.

The Group of African Nations, the Governments of India and China, the European Commission and many other government bodies support Contraction and Convergence. In Britain it is supported by over half of the MPs in parliament, as well as many campaigners and groups from George Monbiot and Mayer Hillman to Scientists for Global Responsibility and the Royal Institute of British Architects (RIBA).

Source: [www.climatejustice.org.uk/about/contractionandconvergence/](http://www.climatejustice.org.uk/about/contractionandconvergence/)

## Top Ten Countries for Total CO<sub>2</sub> Emissions

Country	Total emissions (million metric tons of CO <sub>2</sub> )	Per capita Emissions (tons/capita)
1. China	6018	4.58
2. United States	5903	19.78
3. Russia	1704	12.00
4. India	1293	1.16
5. Japan	1247	9.78
6. Germany	858	10.40
7. Canada	614	18.81
8. United Kingdom	586	9.66
9. South Korea	515	10.53
10. Iran	471	7.25

Source: Energy Information Agency (Dept. of Energy) data for 2006

(Note: the highest per capita emitter is Australia at 20.58 tons)

## Congressional Update

REP. LLOYD DOGGETT

### *Coping after Copenhagen*

After World War II, the Marshall Plan built a strong economic foundation for Western Europe and acted as a bulwark against further communist expansion. Looking back, it is easy to forget how difficult real progress was. British Prime Minister Gordon Brown noted that "Leaders [fought] against short-sightedness, inertia, and the dominance of old backward-looking dogmas."

Now, we must marshal the same unity of purpose because there is no shortage of short-sightedness, inertia, and backward-looking dogmas blocking our progress on combating global warming. What is the apt label for the first decade of this century? Perhaps a fitting name is the "naughts" because nothing was achieved on so many fronts, including much progress on moving us to a clean energy economy.

Copenhagen did not produce the international accord that we so desperately need, though we at least began moving away from Bush Administration obstructionism, and thanks largely to President Obama's negotiating efforts, China has finally agreed to report and verify their greenhouse gas emissions reductions.

But if intransigence did not hijack the Copenhagen conference, the unwillingness to raise the bar on what we could achieve has left many, including me, very dissatisfied. Settling for modest, incomplete half steps is not the best path to meeting this urgent global priority.

Yes, Republican Senatorial obstructionism will continue to hinder efforts for real change. It is like trying to fight a fire when some are intent on knocking the hose out of your hand, shutting off the hydrant, and claiming that until the house is reduced to ashes there is no real proof of a conflagration.

Even among those in the Senate who acknowledge the necessity of action, many say they will not act without assurances that our international competitors will do the same. And without Senate action, the United States cannot be committed to a binding treaty.

But all the blame cannot be assigned to the flat-earthers and all the responsibility does not rest with the United States Senate. There must be more of sense of urgency on reaching resolution for many more families before anything meaningful happens.

*Continued on page 15*



By Joel Pett, Lexington (Ky.) Herald-Leader, Cartoonists and Writers Syndicate, for USA TODAY



# Outings

In order to participate in one of the Sierra Club's outings, you will need to sign a liability waiver. If you would like to read a copy prior to the outing please use the link on our website's outings page, national's URL at <http://www.sierraclub.org/outings/chapter/forms/> or call (415) 977-5630.

In the interest of facilitating the logistics of some outings, it is customary that participants make carpooling arrangements. The Sierra Club does not have insurance for carpooling arrangements and assumes no liability for them. Carpooling, ride sharing or anything similar is strictly a private arrangement among the participants. Participants assume the risks associated with this travel.

Unless otherwise indicated, a \$2 donation (\$3 for nonmembers) is requested on all outings.

## WEDNESDAY, JANUARY 27: ICO (Inner City Outings) General Meeting

Meet ICO volunteers and leaders at REI Downtown (6th & Lamar) for quarterly general meeting from 6:30 to 8 pm. Learn about the Sierra Club's outreach program for youth. Sign up for outings, leadership training or just learn more about the activities going on for this Spring. Additionally, we will be discussing organizational leadership opportunities - current openings exist in several positions - Vice-Chair, Fundraising/PR Coordinator and Secretary/Leader Recruitment Development Coordinator. Contact Ann Clift at 512-924-5358 or email [anncliftico@yahoo.com](mailto:anncliftico@yahoo.com) with any questions.

## SATURDAY, FEBRUARY 6: TURKEY CREEK - DOG FRIENDLY

Meet at 9:30 am. Bring water, good shoes, sunscreen and dog treats. This is a pretty hike on the nature trail at Emma Long Park. Hike length is 3-4 miles. When the creek is full it is especially pretty. For more information call Jan 326-2690 or email at [janaprima@yahoo.com](mailto:janaprima@yahoo.com).

## FRIDAY THROUGH MONDAY, FEBRUARY 12-15: PRESIDENT'S DAY GOOSE ISLAND CAMPOUT

Spend a long weekend on the Gulf Coast. We'll leave Friday after work and carpool to Goose Island State Park. This trip offers excellent opportunities for wildlife viewing and birding. Options include visiting the Big Tree, touring the Fulton Mansion, and hiking or biking through the Aransas National Wildlife Refuge. There is also an optional paddle trip through water trails in the sea grass tidal flats (the famous Lighthouse Trail). (Bring your own canoe or kayak, or plan on renting one.) A tour of whooping crane nesting on a whooping crane tour boat with a local guide will be a highlight of the trip. The \$75 fee includes meals in camp (beginning with breakfast on Saturday morning), all camping fees, and the complete cost of the Whooping Crane tour. Additional expenses: canoe rental, park entrance fees and dinner in town one night. Trip limited to 20 participants. Trip leaders will be Celeste Padilla and Becky Patterson. Contact Celeste at [celestehpadilla@yahoo.com](mailto:celestehpadilla@yahoo.com) or 512-470-2201 for details.

## SATURDAY, FEBRUARY 13: CLEAN LADYBIRD LAKE

The year's already off to a racing start and February will be here before you know it. What better way to show your love of Austin and Lady Bird Lake than by helping get it all spruced up in time for Valentine's Day? Countless romantic walks, first kisses, and even proposals have happened at the lake and nothing says romance like Styrofoam floating on the water. Well not really, so let's clean it up before the big day! It's much more relaxing to watch a sunset with a heron wading along the edges of the lake than to watch you and your friend's blood pressure rise as you see the heron wade through floating plastic bottles and packing peanuts. Come show your love for the lake, search high and low for every last bit of trash, and get to know other lake enthusiasts. Sierra Club members with their own boats will launch the Holiday Inn boat ramp on the NW corner of the lake and IH-35.

Don't have a boat? No problem! Sierra Club's going to lead the volunteer charge starting from the NW corner of the lake and IH-35 to clean from both the shoreline and the water.

Still not enough to get you off the couch and out and about enjoying Austin's beauty and making a difference? There will also be a prize for the most unusual object found, Love Puppies Brownies will donate freshly baked goodies, and locally owned Trailer Perk will treat all volunteers to a post-cleanup hot chocolate or coffee if they know the secret word.

Sign Up to Join the Fun (and find out the secret word) at [www.keeppaustinbeautiful.org/ladybirdlakecleanupfebruary13](http://www.keeppaustinbeautiful.org/ladybirdlakecleanupfebruary13) or contact Michael Portman ([michael.portman@wellsfargoadvisors.com](mailto:michael.portman@wellsfargoadvisors.com)) for more information.



## Sierra Club Families

Are you a Sierra Club member with children? Would you like to meet with other Sierrans with children for camping, backpacking, outdoor projects, etc?

Some local Sierrans would like to start a Sierra Club Families network to share outdoor experiences with other families and children. We are especially interested in identifying others who like to take their children camping, backpacking, and boating. As part of the Sierra Club outdoor initiative, we would like find ways to help families get outdoors. Doing so with other families is usually a big help since there are other kids to play with, more adults to watch (so you can take a break every now and then), easier time cooking and cleaning with group meals, and just more energy and fun with more kids around! For those who have always wanted to try it, going with experienced parents is a good way to break yourself in. It is also a great way to introduce children to the joys of the outdoors that so many of us in the Sierra Club experience.

If you are interested in meeting other Sierrans with children for outdoor activities, contact ExCom member Scott Swearingen. Tell us your experience camping/packing/boating with your kids and family, and what you would like to do more of with other families. Swearingen has been camping and backpacking with his children for 12 years.

If there are other Sierrans families that would like to try some group camping we will try to arrange some family trips to various locations. We might also put together some program activities in town that focus on outdoor skills and education. Sierra club activities such as clean-ups can make good public service projects for children who need them for other organizations.

Scott Swearingen, [scottandgeorge@earthlink.net](mailto:scottandgeorge@earthlink.net).

### TUESDAY, FEBRUARY 16: CHILLY HILLY TASTE OF ITALY HIKE

Starting at 6:30 pm from Mangia Pizza, 8012 Mesa Drive (SW corner of Mesa and Spicewood Springs, next to Randalls). Join us for a brisk 5 mile hike on quiet residential streets, past the Stillhouse Hollow and Barrow Nature Preserves, and up some of the steepest hills in Austin. Possible to see deer on the hike. Join us for food and drink afterwards. Bus Route 19 takes you to the starting point:

<http://www.capmetro.org/riding/schedules.asp?f1=019> Leader: Niles Seldonseldon@ix.netcom.com

### SATURDAY, FEBRUARY 20: HIKE STORM RANCH

A rugged, off trail, four hour hike and tour at this privately held 6000 acre conservation property and working cattle ranch on Ranch Road 12. Be prepared for possible stream crossings and breathtaking views. Bring lunch, water, hat, hiking attire, and sunscreen. Number limited. Visit: <http://stormranchhike-feb10.eventbrite.com/> to sign up. For more information: [adonfelipe@gmail.com](mailto:adonfelipe@gmail.com).

### SATURDAY, FEBRUARY 27: BARTON CREEK GREENBELT, GAINES ACCESS

Meet at 9:30. Bring water, hiking shoes, a snack and sunscreen. Hike length is 4-5 miles and terrain is rough. With water in the creek this is a beautiful hike. Trail entry off of South Mopac exit from 360 South on access road. Please call Jan for more information at 326-2690 or email [janaprima@yahoo.com](mailto:janaprima@yahoo.com).

### WALKING GROUP

The Sunday morning walking group meets at 8 am at the Austin High School tennis courts for one hour of exercise followed by breakfast/social hour at a nearby restaurant. Contact Bonnie for further details at 445-6223 or [merleandbon@earthlink.net](mailto:merleandbon@earthlink.net).

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## Stop Global Warming with Better Soil

PATRICK VAN HAREN and KARIN ASCOT

### *Part II: Animal Impact or Compost Tea?*

In the last newsletter, we started this 3-part series with a discussion of compost. If you missed it, please go to the [www.microbialearth.com](http://www.microbialearth.com) website and click on the Sierra Club article at the bottom of the page.

We now have a basic understanding of the role of composting and microbes in our yard. Compost is an incubator for the all-important microbes that the ecosystem needs to survive and thrive, and that represent the first level in the soil food pyramid (soil foodweb). Compost can increase the water-holding capacity of the soil, improve ecosystem biodiversity and nutrient levels in food, and sequester significant amounts of carbon from the atmosphere. Here we explain how the tall grass prairie ecology functions and the critical role played by microbes.

Prior to European settlement, the prairies had been described as a dense turf. That turf was a mat of dead grass, soil, microbes, water, air, humus and other organic matter. It was a perfect match for the infrequent and disparate rainfalls that we receive in this region. In many places it was more than 12 inches thick, and thus able to absorb and trap all the rain, even from abnormally large rainfall events. This made for excellent water cycling in the soil. The superb water holding capacity allowed the grasses to grow tall and protect the turf from evaporation, and in turn the nutrients contained in the turf increased the nutritional value of the grasses. Such turf fit the definition of good soil, which is comprised of approximately 25% air, 25% water, 45% mineral, and 5% organic matter (typical local soils now contain something like 0.5% organic matter; 13-14% would be the highest quality soil).

How did this turf come to be? In great part through large herbivores, namely bison. Bison are grass-eating machines. Large mobs of several thousand would gather together to protect themselves against predators such as wolves. Bison collected this tightly together keep their heads down and graze continually in order to get enough grass. The actions of their hoofs and legs compact the grass and crimp it, such that the grass cannot come back to life again. The dead grass holds the droppings, which are quite runny when grass protein levels are high. Dead grass and droppings compost together and form a new layer of soil called the organic fraction. The bison's hooves would also push into the soil and open up the seed bank, which would come alive with exposure to the moisture, air and microbes. Over time, this layer builds thicker and thicker. After 100 or 200 years, there might easily be an increase of an inch or more thickness, and after a thousand or so years, several inches. Every now and then, wolves would appear around the perimeter of the herd, and

the herd would move several miles to avoid them. In this way, the bison never over-grazed the grass, and seldom visited the same patch more than once a year.

How did we lose this turf? The John Deere plow was the required innovation to cut up the turf so that farmers could make a good seed bed for planting cereals and grains. The plow opened up the soil, exposing massive amounts of soil carbon to oxygen in the air and forming CO<sub>2</sub>. After decades of farming, the soils were depleted of their natural fertility and then converted to grazing pastures. At this point our tax code encouraged lazy grazing habits. Under typical contemporary grazing management, all cattle have access to a single large area of grass for 30 to 90 days. They eat the best grasses first, and as soon as the roots support new leaf growth, the cattle return to gobble up the tender new leaves. After 2-3 cycles, the best plants die off because their roots can never regain the necessary energy to support growth. In contrast, with mob grazing, pastures can support around 100 cattle per 100 acres because the grass receives sufficient time to regrow: the cattle are moved each day (as the wolves moved the bison) and each section of pasture recovers for 60-130 days. The difference between the two systems is in our assumptions about the amount of space cattle require for what period of time. The two systems are diametrically opposed in their assumptions regarding time and space.

Now let's take a closer look at what is happening with the microbes. Bison are herbivores, meaning that they have four chambers to their stomachs in which to digest the grass. The chambers are filled with various species of microbes that digest grass. The bison are a vehicle for distributing microbes across the prairies via their droppings. From the point of view of the ecosystem, meat from the bison is merely a by-product. Thus, we say that **if you don't have bison in your backyard, you need to buy compost tea** to complement your own compost production. Bison and compost tea are the most efficient forms of distributing microbes on your soil. What does this mean for your yard and soil? In general, local soils are now very thin. We do not have the natural ecology of thick turf in our yards. In order to restore the soil, we need to replicate the actions of the bison, which provided two functions: depositing microbes and crimping the grass. By adding organic matter such as mulch, dead leaves and dead grass, we can provide the smaller size biomass required by the microbes.

In our final article next month, we will write about how we can restore microbes to the soil similar to the way the bison did it. The technology is called compost tea, and it is available at the various garden centers and farmers' markets here in Austin.

- **So, what is walking, “chopped liver?”** When will the city of Austin recognize that walking is a major means of transportation? The simplest, cheapest, and cleanest way to move around is eternally neglected here. For the cost of the recently approved water plant, Austin could have sidewalks – legitimate walking space – on both sides of every street block. But it seems that we will never have this. “Green transportation” in Austin means a few hybrid cars, a not-yet-operable diesel-powered passenger rail car, and too-narrow bicycle lanes on a few streets. It does not include safe, comfortable space for walking around the city. In photos from **Copenhagen**, we can see that pedestrians get as much street space as cars, bicyclists get a full-sized street lane, and buses get their own lane. The Austin system is to block every single street lane with cars, and on most streets to give pedestrians no space at all. There are no plans to finish Austin’s sidewalk system in less than 200 years. Nor are there any plans to allocate street space to pedestrians. Even right next to elementary schools there are no sidewalks. When it comes to transportation, Austin is stuck in the 1950s. This is a sad waste of resources. Austin has an excellent climate and natural resources for walking and bicycling. Yet cities without our natural advantages devote much more space to human-powered transportation. Why are we so backward – and at the same time so self-congratulatory? It is contradictory nonsense to praise “green transportation” while ignoring its greenest and most basic form. Walking is fundamental. Let’s start recognizing that. Finish the sidewalks. Help people cross the streets. Without these basic steps “green transportation” is empty talk.

*(The Austin Chronicle printed this letter by the irrepressible Amy Babich in their January 1 issue)*

- **Speaking of walking:** Council Member **Chris Riley** wants to transform one of Austin’s meanest, least civilized stretches of inner-city highway into a walkable, transit-oriented, dense-yet-human-scaled street with unique neighborhood charm. This Herculean task is aimed at the stretch of **Airport Boulevard** between North Lamar and IH 35. Working pro bono with Riley is Austin’s own **Scott Polikov**, president of Gateway Planning Group, which works nationally to craft and implement “form-based” projects. Regulated by **form-based code**, new projects must fit sensitively into the context of existing neighborhoods and the resident’s vision of the future. Along today’s Airport Boulevard 1960s-era strip-malls predominate, with some empty storefronts and a handful of surviving businesses. In the center is **Highland Mall**, a failing venture surrounded by empty parking lots, but ideal raw material for a conversion to a live-work-play urban village. And the street has two, yes two, station-stops of the **Red Line** commuter passenger rail due to begin operation in a few months.

- **Coming: Pay a fee for every mile you drive:** Money to build highways has dried-up in the state and in the nation. The conventional sources of funds to support automobile and truck travel: gasoline taxes (legislatures refuse to increase them) and toll road tolls (no one wants to buy toll-revenue bonds) can no longer pull their weight. The State of Texas has only enough money to maintain our roads and bridges, but that’s it, and, unless a radically new source of funds is found, nothing is going to change. Yes, we’ll be building a few new road lanes and flyovers in Central Texas for a while, but they are thanks to federal stimulus funds – funds that have all been allocated. But wait! There is a new source. Our more progressive neighbor, Europe, is already testing it. And there are even timid whispers in the States that there is a cheap, fair and democratic (attributes probably unacceptable to our good-ol’-boy government) alternative to the gasoline tax and tolls. The Dutch government wants to abolish current taxes on automobiles and instead levy a fee for every kilometer driven. The Transport Ministry says the move will cut congestion in half and curb carbon dioxide by 10 percent. Motorists driving a typical sedan would pay 3 Euro cents per kilometer (7 U.S. cents per mile) under the law, which if passed would take effect in 2012. Each vehicle will be equipped with a GPS device that tracks how many kilometers are driven and when and where. This data will be sent to a collection agency that will send out the bill. The tax would vary by type and weight of automobile, and by time, peak or off-peak. Advocates of the tax say nearly six of 10 drivers will benefit because the tax burden will be shifted to people who drive the most and at peak times. So far detractors haven’t come up with any sound arguments.

## Book Review

JUDITH CLARKSON

**Gore, Al, *Our Choice, A Plan to Solve the Climate Crisis*, Rodale, Inc., Emmaus, PA, 2009.**

This book is a comprehensive look at every aspect of climate change, with an emphasis on practical solutions. The first half of the book discusses every form of energy available to us, with a detailed discussion of the physics and economics, together with the pros and cons of each. The illustrations are marvellous and make complex technical processes accessible to anyone over the age of 10-12. For instance, there is a diagram of how concentrated solar thermal power works.

An initial chapter outlines the byproducts of burning fossil fuels, showing the amount of carbon dioxide, methane and other pollutants produced by each for the same amount of energy generated. Gore explains how many of the costs associated with these byproducts (such as adverse effects on human health) are not reflected in the amount we actually pay for the energy generated from each.

Subsequent chapters cover every available form of renewable energy, including solar power (both photovoltaic and concentrated solar), wind, biomass and geothermal. He explains how the economics are changing with time and how hidden incentives and subsidies that result from government policies affect the adoption of new technologies. This has been particularly important for the development of renewable sources of energy, which are inevitably more expensive than conventional, fossil fuels, until economies of scale take effect.

I found the chapter on biomass energy particularly interesting. Gore admits that he aggressively supported the development of ethanol when he was in Congress, but now admits that there are few advantages over the life cycle of the production process. He does see hope for second generation ethanol, made from miscanthus or switchgrass, but concludes the chapter by saying that biomass might be better used as a feedstock for the generation of heat and electricity and could be used to displace as much as 20 percent of the coal in existing boilers.

The potential for carbon capture is also covered. Despite much research, this does not appear to be a likely solution for a long time, both for technical reasons and because it uses a lot of energy. In fact it would require the coal industry to burn 25-35 percent more coal to produce the same amount of electricity.

The chapter on nuclear power covers its costs and benefits and its status as a source of power globally. Construction costs continue to be an overriding factor, demonstrated by the fact that a new modular

reactor design being built in Finland is now far behind schedule and way over budget.

The next section of the book discusses living systems and how their preservation could make a huge contribution to mitigating the impacts of man-made pollution. The clear-cutting of forests, sometimes to produce biofuels, is discussed and efforts by countries such as China to mobilize their populations to plant trees is also included.

One of the most important chapters covers the importance of enhancing the carbon capturing ability of soil by increasing its organic content. Modern agricultural practices, particularly the use of syn-

*"The choice is awesome and potentially eternal. It is in the hands of the present generation."*

thetic nitrogen fertilizers, are responsible for 12 percent of global greenhouse gas emissions, just from methane and nitrous oxide, both of which are far more powerful greenhouse gases than carbon

dioxide. Also devastating are the widespread slash-and-burn land use strategies in less-developed countries, as well as the clearing and burning of peatlands and the thawing of the Arctic tundra.

Other important topics include population growth and energy efficiency. Those of you interested in advanced technologies will be fascinated by the chapter on the super grid, as well as the potential for using computerized systems both to monitor energy use and to schedule activities such as recharging car batteries. The issue of energy storage is also critical, particularly for the development of renewable energy, which is often produced during periods of lower demand. Currently the legal and regulatory framework surrounding electricity generation, storage, transmission and distribution is outdated and may act as an impediment to investment in energy storage and efficiency.

There is an important chapter on using market mechanisms so that the true cost of fossil fuels is reflected in their price. The use of cap-and-trade to reduce the emissions of pollutants that cause acid rain is used as an illustration of one possible approach, although a carbon tax may also be necessary.

Finally Gore discusses the ways humans approach decision making and why climate change seems to be such an intractable problem. Using sophisticated advertising techniques that have focussed on creating doubt about the science of global warming have served the fossil fuel industry well in its quest to delay effective action. Will we meet this challenge head on, Gore asks, or will we have to admit to the next generation that we failed? Although other countries are responding to the challenge, it will take leadership from the U.S. for the world to adopt policies and technologies fast enough to effectively address this problem.



## ***It Happened at the ExCom***

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### ***Minutes of the December 2nd Meeting***

Present: Melody, Roy, Chris, Chuck, Scott, Terry

The Volunteer of the Month and Year lists will be emailed to ExCom members for further discussion.

Chuck's resignation from ExCom was regretfully accepted. Philip will be asked to clarify the results of the election count, after which ExCom will make an appointment to Chuck's position.

Terry proposed that each ExCom member bring a non-member to a meeting and that the outings chair attend ExCom meetings several times a year. Chuck moved that each ExCom member lead an outing in their field of expertise.

Terry suggested convening a meeting each quarter after the mayor's lunch – perhaps a conservation committee meeting that evening. It would begin with a recap of the mayor's lunch. There was discussion as to how to allocate responsibility for conservation matters between the Conservation Committee and ExCom. Terry reminded us that we need to address administration and budget review more effectively.

To better track administrative scheduling, we need a more accessible online calendar. Melody agreed to create and maintain a dated list of events to be placed online. She will also review ExCom meeting minutes for additional calendar items.

An April spring fling fund raiser will be planned by Roy and a group to be organized by him. It may occur around Earth Day and will include a reading by Scott from his new book. Roy will investigate Barr Mansion's availability in April. Chuck, as Volunteer Coordinator, will assist finding a location and date.

Scott will organize a spring family camp out. Chris reminded him that outings must be published in the newsletter so a deadline must be met. In addition, outings must be led by an outings' leader.

Roy asked whether Roy Barnet and Resolution Gardens should be given free advertising in the newsletter in return for a 5 percent discount to Sierra Club members using his services. We decided to run it once. Roy speculated that we are setting a precedent and Scott suggested that if this sort of ad was "part of a larger fund-raising mechanism" it would require a considered policy decision. The larger issue of fund raising, advertising policy and ads vs. endorsements will be discussed further.

*See page 15 for January 6th minutes.*

*Our Mission: To explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.*

## **Sierra Club**

Austin Regional Group  
P.O. Box 4581, Austin 78765-4581  
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<http://www.texas.sierraclub.org/austin>

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### Shellfish Threatened in "Acid" Arctic Ocean

Carbon dioxide emissions are turning the waters of the Arctic ocean acid at an unprecedented rate. Scientists predict that in many areas seawater is likely to become corrosive within ten years and will start to dissolve the shells of mussels and other shellfish. By 2050 one half of the ocean will be affected, and by 2100 the entire Arctic ocean will be corrosive.

The problem is worse at the poles than at the equator because carbon dioxide dissolves more readily in cold water. About a quarter of all carbon dioxide pumped into the atmosphere is dissolved by the oceans as carbonic acid, representing more than 6m tonnes of carbon per day. Coral reefs at higher latitudes have far less diversity than those in the tropics and are dominated by one species that is extremely vulnerable to acidity. Loss of this species would devastate the reefs off Norway and the coast of Scotland, resulting in the removal of shelters exploited by dozens of fish species. This will cause major disruptions in the food chain, affecting species such as the north Atlantic salmon.

Carbon from the atmosphere is being transported into the deeper waters of the oceans much faster than previously thought and is already having a corrosive effect on life forms. Loss of plankton, a critical component of the food chain, would have the added effect of reducing the ocean's ability to absorb carbon. As much carbon is absorbed by plankton as is absorbed by tropical rainforests.

Source: *The Guardian Weekly*, October 10, 2009

### Coral Reefs Face a Fading Future

A report from the Australian government agency that is responsible for the Great Barrier Reef claims that "the overall outlook for the reef is poor and catastrophic damage to the ecosystem may not be averted." Within a few decades tropical reefs will be reduced to rubble. With them we will lose about one-third of the world's marine biodiversity. And, as reefs fail, so will other ecosystems.

The symbiotic relationship that exists between the coral and its associated algae has evolved to operate within a fairly narrow temperature range. Previous episodes of warming, such as that during the 1997-98 El Nino, demonstrate how they react to higher water temperatures. During this period a fifth of coral communities worldwide were killed. There has been some recovery, but the loss still stands at 16 percent. It is thought that at higher temperatures the algae produce toxic oxygen compounds called superoxides, which damage the coral. The coral responds by ejecting the algae, leaving the coral starved of nutrients and deathly white.

In addition, corals suffer from other poisons and pollution, as well as the impact of higher carbon dioxide levels in the atmosphere, which has made the oceans more acidic. Surface waters of the world's oceans have dropped by 0.1 pH units and calcification rates across the Great Barrier Reef have dropped 14 percent since 1990.

Source: *The Guardian Weekly*, September 18, 2009

## *Congressional Update*

*Continued from page 7*

It is about convincing our neighbors and friends why action is necessary and why it must happen soon. It is about more Texans understanding that during the lifetime of today's youngest Texans, our State is on schedule to become a very different place—more and more of it will look like the Sonoran desert and we may increasingly be taking note of the Lost Life Oaks in the same way we enjoy that too brief stretch of Lost Pines in Bastrop. We are headed for more droughts and erratic weather at the same time as rising sea levels submerge much of the existing Texas coast. If we fail to act, then more hundred-degree April days and worsening droughts become an increasingly likely scenario.

We must raise our voices so that not only elected officials but also our neighbors, friends, and families, understand the risks we face and how much Texas stands to lose. And we should define success by what science dictates we must achieve.

The Copenhagen Accord, three-pages of text, carries no legal obligations on the countries who signed it. Instead, it establishes a political agreement that nations would limit an increase in global surface temperatures to no more than 2 degrees Celsius above pre-industrial levels. The emission targets for developed countries are not strong enough to help bring global greenhouse gas levels into line with scientific warnings.

President Obama has called the Copenhagen deal a "first step." Optimistic words, but in fact, this is barely a half step, much too little and way too late. We have nothing more than lay some very basic ground rules for a treaty to be produced in December 2010 or more likely, some distant future date.

No one expected Copenhagen to resolve the issue of climate change for perpetuity. Of course, the hard work must continue. Even when a regime is put in place, there will be those who offer endless excuses on why it should be weakened or abandoned. But the lackluster results of the conference mean that we will have to work even harder, as the odds against passing comprehensive climate legislation are even higher in an election year. And just as important as passing a climate bill is that we get a climate bill worth passing.

The climate bill that we passed in the House this past June scarcely passed muster. Looking at its handouts to polluters, generous carbon offsets, and risky new carbon market, the question of whether doing something was better than nothing remained unanswered. But one of the reasons I ultimately supported the wholly unsatisfactory House bill was that I held out hope that this display of Congressional action would bring about international accord we so desperately need.

Realistically, not unlike its recent consideration of health insurance reform legislation, the Senate, if it does anything this year, will only make the weak House proposal even weaker.

It may be that the only bill the Senate can secure votes to approve this year is not worthy of approval. Already we have seen concessions, advertized as "compromises," about nuclear energy and offshore oil drilling. At a minimum, we cannot tolerate further giveaways to huge corporations with well-paid lobbyists in the name of addressing global warming just to get an ineffective bill. Perhaps, we must even consider steps short of a cap and trade bill, such as regulatory action by the Environmental Protection Agency, which will facilitate at least minimal progress toward reducing carbon pollution.

This new year is barely underway, but one of my resolutions remains the same: we must take strong action against global warming before our inaction commits us and our grandchildren to a drastically altered planet. I will not give up my work for real reform.

---

### *Minutes of the January 6th Meeting*

Attending Chris Lehman, Terry Moore, Kedron Touvel, and Roy Waley

Tremendous appreciation goes out to our Outings Leaders for their outstanding contributions on so many great wilderness experiences. Numerous ideas and action items were developed to support improvements to our wildly popular Outings Program.

Volunteer of the Month goes to Kathy Thomas for her work on Roll Beyond Coal Ride/Event.

Earth Day--Scott will spearhead the Austin Regional Group of the Sierra Club's Earth Day programs this year and invite participation in our newsletter

The budget was discussed with particular reference to the shortfall resulting from higher than expected expenses for the Big Bend trip. Several options for reducing our expenses were discussed, with particular emphasis on the newsletter. It was noted that the Dallas Group of the Sierra Club has gone to an electronic newsletter and eliminated their paper version saving trees, energy and significant amounts of Club money. Dallas did it without membership reduction. In the interim we will look at reducing our newsletter to six issues/year from the current ten.

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## ***Austin Group Committee Meetings***

### **Executive Committee**

Last Wednesday at Lone Star Chapter office conference room, 1202 San Antonio St. Next meeting: January 27th, 6.30 pm.

### **Outings Committee Meeting**

Normally, the week before the general meeting. For details of time and place, contact Steve at [stevenfunderburg@hotmail.com](mailto:stevenfunderburg@hotmail.com)

### **Conservation Committee Meeting**

Monday, February 1st and March 8th, 6-7.30 pm, 1202 San Antonio. Contact: Terry, 214-608-0314.

### **Inner City Outings Meeting**

Wed., Jan. 27th, See page 8 for details or contact Ann Clift, [anncliftico@yahoo.com](mailto:anncliftico@yahoo.com), or 924-5358.

### **Other related area meetings...**

#### **Austin Butterfly Forum**

Meets 4th Monday, 7 pm, Zilker Garden Center. 577-0250/ [www.austinbutterflies.org](http://www.austinbutterflies.org)

#### **Austin Paddle Club**

Monthly on the 2nd Thursday, 7 pm, LCRA Colorado Room, [www.austinpaddling.org](http://www.austinpaddling.org)

#### **Austin Metropolitan Trails and Greenways**

For details of meetings, contact Jebb Boyt, 475-3786, or go to [www.austrintrails.org](http://www.austrintrails.org).

#### **Austin Organic Gardeners**

Meets 2nd Monday (exc Dec.), 7.30, Zilker Botanical Garden. [www.Main.org/aog/](http://www.Main.org/aog/)

For changes in above information: [judithclarkson@att.net](mailto:judithclarkson@att.net)

### **Bastrop County Audubon Society**

Meets 3rd Tuesday, 7.30 pm, First National Bank, Hwy 71 at Hasler. Contact: Priscilla, 281-2762, [www.bastropcountyaudubon.org](http://www.bastropcountyaudubon.org).

### **Bastrop Area Riding Club (BARC)**

Bike rides Mondays, Wednesdays and Thursdays. Contact: [john@risingphoenixadventures.com](mailto:john@risingphoenixadventures.com)

### **Design-Build-Live**

Monthly on 3rd Wednesday, 7 pm, Casa de Luz, 1701 Toomey Rd. [www.designbuildlive.org/](http://www.designbuildlive.org/)

### **Hill Country Alliance**

Grassroots conservation org. Contact: 560-3135, [info@hillcountryalliance.org](mailto:info@hillcountryalliance.org)

### **Native Plant Society**

Meets 3rd Tuesday, 7-9 pm (except Dec.), Wild Basin. <http://npsot.org/Austin/>

### **Oak Village Commons**

Building a sustainable neighborhood in Oak Hill. Meets 1st and 3rd Saturdays, 4:30. Contact Debbie Dyson, 371-7612/ [www.oakhillcohousing.org](http://www.oakhillcohousing.org)

### **Travis Audubon Society**

Meets 3rd Thursday, 7 pm, LCRA Hancock Bldg. 300-BIRD (2473)/ [www.travisaudubon.org](http://www.travisaudubon.org).

### **Texas Outdoors Woman Network (TOWN)**

Meets 4th Tuesday (exc. Dec.), 6.30 pm, at LCRA Redbud Center, [www.townaustin.org](http://www.townaustin.org).

### **The Capital Area Master Naturalists**

Meets last Wednesday, 7 pm, Austin Nature and Science Center, [www.CAMN.org](http://www.CAMN.org)