



# THE SSE ELUCIDATOR

*"Elucidate: to give clarity through explanation and analysis."*

## BIKING TO WORK: MAKING THE SWITCH



Now that summer is in full swing, it offers a great opportunity to start pedaling your way to work. There's no better way to burn calories while cutting pounds of carbon emissions. How many? Cycling at the mellow rate of 5 miles per hour,

you'll burn about 175 calories in an hour. Compare that to your car, which releases about 23 pounds of the greenhouse gas carbon dioxide for every gallon of gas burned. Not only will you save money, get good exercise, and experience your city more intimately, but you'll also cut local air pollution, reduce greenhouse gas emissions, and help unclog the streets of congestion and traffic.

So to get you safely to the office (and back home again), here are twelve tips everyone should consider before pushing the pedals.

### ***Before you mount up:***

1) Check your local air quality. Before heading out, visit the EPA's AIRNow air quality index at [www.airnow.gov](http://www.airnow.gov). If your city's air quality index exceeds 151, consider taking public transportation or driving, since air pollution at that level can affect all individuals. To reduce harm to developing lungs, children should avoid riding bikes to school when the AQI is above 100. Regardless of air quality, avoid

### INSIDE THIS ISSUE

Biking to Work: Making the Switch	1
10 Gas Saving Tips	3
Discover Ecotourism	4
July's Careless Calamities	5
Summer Gardening Safety Tips	6
Great Green Books for Summer	7

routes heavily trafficked by big, diesel-powered trucks and busses, which release particulate matter that not only triggers respiratory problems like asthma and lung disease but has also been found to increase the risk of heart attacks and strokes. And while you're at it, check the weather to see if rain is in the forecast for your ride home.

2) Pump it up. To avoid untimely flats, make sure your tires are properly inflated to the recommended air pressure, which is typically located on the side of the tire and listed in pounds per inch, or ppi. All floor pumps have an air pressure gauge built in, but if you've only got a hand pump, use a separate hand-held gauge.

3) Check the brakes. Always, always check your bike's brakes before every ride. Lift the front wheel off the ground, give it a spin and squeeze the brake lever; the wheel should halt instantly. Repeat for rear wheel (spinning the top of the tire backwards, so as not to engage the cranks and pedals and ding your shin!).

4) Don a decent helmet every time you ride, no matter how short the trip! Choose one made for cycling that fits snugly on your head without wiggling

## BIKE TO WORK: MAKING THE SWITCH (CONT.)

around. Adjust the straps to wrap securely under your chin, without choking you, of course. Replace any helmet that's taken a good pounding, as it may have been weakened in the crash.

5) Find the right fit. Adjust your bike's saddle, or seat, so that your knee is just slightly flexed when the pedal reaches the lowest point of its orbit. This saves your knees and maximizes efficiency.

6) Dress smart. Wear brightly colored, reflective clothing, especially if you'll be riding at dusk or after dark. During cooler weather, cover up with light, breathable layers such as lightweight merino wool or recycled polyester.



### *On the road:*

7) Your bike is a vehicle. As such, you must obey all local traffic laws and rules of the road. Ride with traffic, never against it—even on one-way roads. Heed stop signs, red lights and all other traffic signals, and always use hand signals to change lanes

and turn. Hand signal definitions can be found at [www.grand-island.com](http://www.grand-island.com).

8) Stick to bike lanes and bike paths whenever possible; there's no safer place to ride. If there aren't any designated lanes or paths in your city, contact the local Department of Transportation or Department of City Planning and find out if there's a bike master plan, which basically outlines a city's plans for future bike infrastructure.

9) Show some respect. Out-of-control cyclists give us all a bad name, so be sure to yield to pedestrians and stay off the sidewalk. Nearly everywhere in the country, pedestrians always have the right of way,

regardless of street signs and signals, so stay alert.

10) Illuminate. Mount lights on the front and rear of your bike. Use them even at the first hint of dusk, as low light makes you and your bike much less visible through a windshield.

### *After the ride:*

11) Secure a spot. If at all possible, bring your bike indoors to a safe spot. Ask around if there's any place convenient to store it at work. If your boss or building manager won't allow bikes indoors, try to figure out why and work with that. Ask to use the freight elevator, if one exists, and to store your bike by your desk if you have room (and if your employer or building manager hasn't provided storage space). Otherwise, write to your employer or building manager to asking them to allow bikes inside.

At home, keep bikes inside your garage, house, or apartment. (Wall-mounted bike racks can help save space.) If you must keep it outside, be absolutely sure to lock your bike securely to a rack or other strong, sturdy object using a high-quality lock. Avoid locking to posts or parking meters; thieves may be able to lift your bike off them. Chaining both tires and removing the seat is another good way to deter bike robbers.

12) Keep it clean. Enormously helpful but often neglected, wiping your bike down after a ride will keep it running smoothly. Dirty gears, chains and brake pads will make you work harder to go just as fast and far. Also, lube the chain after every few trips for the easiest ride. While most bike cleansers, degreasers and lubricants are petroleum-based, there are some great plant- and vegetable-oil-based alternatives.

For even more local info, search for your city or town on the League of American Bicyclists' directory at <http://www.bikeleague.org/> to find everything from regional advocacy groups and event listings to repair shops and safety courses—all of which should help get you out of the auto and onto a bicycle in no time.

## 10 GAS SAVING TIPS

Whether driving cross-town or cross-country, everybody wants to save money at the pump. Regardless of the make and model, your car's estimated gas mileage is just that — an estimate. An important variable is how you fuel, drive, and maintain your car.

**The Gas Tank** – Making the right choice at the gas pump is an important first step to keeping your car running efficiently — and economically.

Follow your owner's manual recommendation for the right octane level for your car. For most cars, the recommended gas is regular octane. Using a higher octane gas than the manufacturer recommends offers no benefit — and costs you at the pump. Unless your engine is knocking, buying higher octane gas is a waste of money.

Gas savings gadgets? Steer clear. Be skeptical about any gizmo that promises to improve your gas mileage. The Environmental Protection Agency (EPA) has tested over 100 supposed gas-saving devices — including “mixture enhancers” and fuel line magnets — and found that very few provided any fuel economy benefits. Those devices that did work provided only a slight improvement in gas mileage. In fact, some products may even damage your car's engine or cause a substantial increase in exhaust emissions. For a full list of tested products, visit [www.epa.gov/otaq/consumer.htm](http://www.epa.gov/otaq/consumer.htm).

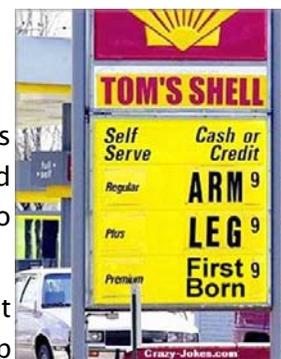
**The Steering Wheel** – When it comes to stretching your gas budget, how you drive can be almost as important as how far you drive. Stay within the posted speed limits. Gas mileage decreases rapidly at speeds above 60 miles per hour. Avoid unnecessary idling. It wastes fuel, costs you money, and pollutes the air. Turn off the engine if you anticipate a wait. Avoid jackrabbit starts and stops. You can improve in-town gas mileage by up to five percent by driving “gently.” In addition, use overdrive gears and cruise control when appropriate. They improve fuel economy when you're driving on the highway.

**The Tires** – Keeping your tires properly inflated and aligned can increase gas mileage up to three percent.

**Under the Hood** – You don't have to be a gearhead to keep your engine purring at its fuel-efficient best. Keep your engine tuned. Tuning your engine according to your owner's manual can increase gas mileage by an average of four percent. Change your oil. Clean oil reduces wear caused by friction between moving parts and removes harmful substances from the engine. You can improve your gas mileage by using the grade of motor oil in your owner's manual and changing it according to the schedule recommended by your car manufacturer. Motor oil that says “Energy Conserving” on the performance symbol of the American Petroleum Institute contains friction-reducing additives that can improve fuel economy. Check and replace air filters regularly. Replacing clogged filters can increase gas mileage up to 10 percent.

**The Trunk** – An extra 100 pounds in the trunk can reduce fuel economy by up to two percent. Removing non-essential stuff can save you at the pump.

**The Driver's Seat** – The only sure-fire “equipment” guaranteed to get more from a gallon of gas is a fuel-conscious driver behind the wheel. Use the windows to help keep the car cool. Or try an electric or solar fan. Parking in the shade and using a reflective windshield shade can keep your car cooler when parked, meaning it takes less to cool it off when you get back in. Also, combine errands. Several short trips taken from a cold start can use twice as much fuel as one trip covering the same distance when the engine is warm. Consider carpooling. Many cities make it even easier by matching up commuters. Bus it, bike it, or hoof it. Why not leave your car at home and consider public transportation, a bike ride, or a stroll across town?





## DISCOVER ECOTOURISM

Summer says vacation like no other season, and if you are planning your next vacation consider planning an eco-vacation. Observe the feeding habits of Grey Whales off the Coast of British Columbia? Be a part of a research team that checks Nile Crocodile traps to measure, weigh, and take blood samples of the reptiles? Or maybe a Roller-Blading Tour of Toronto is more your speed? Taking an eco-vacation will not only take you off the beaten path, ensuring that your trip is unique, but it will also enrich the local environment as well as benefit the people of your destination. This way you can put your tourism dough where your heart is by supporting sustainability and local economies.

**What is Ecotourism?** Going on an Eco-vacation can mean anything from trekking in the Himalayas, scuba diving in Southeast Asia, hiking in the Amazon, or observing gorillas in Uganda. But serious Ecotourism is not only trekking, hiking or watching nature – it involves a traveler's commitment to make as little impact as possible on the environment. Ecotourism allows you to experience a natural environment, including plants, animals, people, and culture without harming it. Ecotourism is about connecting conservation, communities, and sustainable travel. This means that those who implement and participate in responsible tourism activities should follow the following ecotourism principles:

- ◆ Minimize impact
- ◆ Build environmental and cultural awareness and respect
- ◆ Provide positive experiences for both visitors and hosts
- ◆ Provide direct financial benefits for conservation
- ◆ Provide financial benefits and empowerment for local people
- ◆ Raise sensitivity to host countries' political, environmental, and social climate

By choosing responsible travel, you can have the fabulous vacation that you've dreamed of, while ensuring that your dollars are benefiting the environ-

ment and the local people at your destination. Follow these 5 simple steps:

1. Search the web: Look for websites specializing in responsible travel, ecotourism, or sustainable tourism.
2. Consult guidebooks: Choose guidebooks with information on your destination's environmental, social and political issues, and read before booking. Guidebooks vary in quality, even within a series, but Lonely Planet, Rough Guides, and Moon are among the best.
3. Make contact: Call or email tour operators that have firsthand knowledge of the place you are considering visiting. Check the websites of all accommodations.
4. Ask questions: Let tour operators/hotels know that you are a responsible consumer. Before you book, ask about their social and environmental policies. For instance: What is your environmental policy? What percentage of your employees are local citizens? Do you support any projects to benefit the local community?
5. Choose wisely: Are the businesses you're considering certified? Do they have eco-label ratings, or have they won eco-awards?

**Green Lodgings** – If you are not a camper, that doesn't mean you can't vacation green. There are a variety of boutique green hotels just waiting for you. Travelers looking for a "green" vacation can enjoy all the comforts of a luxury resort in an earth-conscious setting. Or they can choose to take a more outdoorsy adventure and rough it in basic cabins in the heart of nature. Over the last decade, many green certification programs have been created. A growing number of hotel, motels, lodges and B&Bs have earned eco-labels by reducing their impact on the environment by changing bed linens every second or third day instead of everyday, by reducing solvent use, by increasing efficiency of lighting, heaters and air conditioners, etc. Try [www.greenhotels.com](http://www.greenhotels.com) for more information.

**Fly Responsibly** – Your flight can be the most pollut-



## DISCOVER ECOTOURISM (CONT.)

ing aspect of your travel. It's estimated that air traffic accounts for 10% of greenhouse gases worldwide. You can help offset carbon emissions from planes (or cars) by supporting energy efficiency and renewable projects. These organizations make it easy: atmosfair: [www.atmosfair.de](http://www.atmosfair.de); My Climate: [www.myclimate.org](http://www.myclimate.org); Native Energy: [www.nativeenergy.com](http://www.nativeenergy.com). In addition, when possible use more environmentally friendly transport such as trains, buses, and passenger boats.

*Eco-Tours* – Some companies specialize in ecotourism, designing their trips to be environmentally, culturally and socially friendly. Companies such as Intrepid Travel, Peregrine Adventures, World Expe-

ditions, Explore Worldwide and Exodus offer trips catering for the thoughtful traveler. Try Ecotour at <http://www.ecotourdirectory.com>. Their directory currently contains 78 eco-holiday agents, tour operators and eco-accommodation providers to help plan your next day trip, weekend break or trip of a lifetime. They provide hundreds of responsible & ecotourism holiday options to inspire you, from exploring pristine tropical islands in Fiji, to relaxing in your log cabin or getting a massage in a Lakota Sioux tipi while surrounded by a powerful buffalo herd in the magnificent Montana wilderness, or even taking an environmentally, culturally and even child friendly Sahara desert trek in Tunisia.

## THE SSE ELUCIDATOR'S MONTHLY CARELESS CALAMITIES

Welcome to the latest edition of Careless Calamities, more continuing education units from the college of hard knocks.

1. On an underway destroyer, an EM3 and an EN3 were rigging a temporary ventilation trunk in an auxiliary machinery room. Sailors call them "elephant trunks," and things quickly became somewhat zoo-like. Seems they had tied a line around an overhead light fixture to hoist the trunk. The bitter end of the line got tangled up in a shaft on a motor that was running. The line whipped around the shaft, producing (and then winning) a tug-of-war with the light fixture. The fixture broke free and would have crashed to the deck if the EM3's head hadn't gotten in the way. Fractured his skull. Report says he spent three months in a hospital and five months of light duty.

2. At about 2000 hours one night on Guam, a 1st lieutenant was heading back to the squadron from chow on his 4-wheel ATV. He made what the report

called a "wrong right turn" and quickly "made a correction to the left," landing into a ditch. The ATV pinned the Marine's leg, inflicting enough surface wounds and bruises so that his next ride was in a 4-wheel ambulance. He spent a day in a hospital and another day on LIMPDU.

3. Two Wisconsin youths suffered minor injuries while trying to pry the bullet from some rifle ammo and remove the powder. They initially tried pliers, to no avail. The next tool of choice was a power drill. The drill bit ignited the gunpowder, which exploded. The 17-year-old, who was wielding the drill, suffered powder burns on his face and hands, along with a minor eye injury. The 18-year-old, who was holding the cartridge with some pliers, also got some powder burns on his face. The police report noted that the boys didn't have any "specific plans" for the gunpowder, but certainly would have found something interesting to do with it.

That's all for this month, folks. Stay safe and sane!

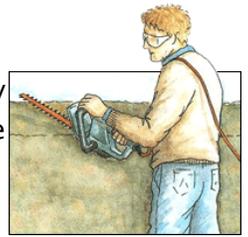
## GARDENING SAFETY TIPS

It's the season when the smell of freshly mowed lawns and loamy, newly overturned soil and mulch waft through the air. But all may not be well in the garden; brush up on your safety tips before pulling out your lawn mower, electric shears or string-trimmer. About 230,000 people are treated in hospital emergency rooms for injuries relating to various lawn and garden tools annually.

### *Lawn Mowers:*

- ◆ Learn the controls well enough to act instantly in an emergency and to stop the machine quickly.
- ◆ Always start the mower outdoors. Never operate the mower where carbon monoxide can collect, such as in a closed garage or storage shed.
- ◆ Make sure all safety guards are in place and keep the mower's blades sharp. If you hit a foreign object or have a mower malfunction, turn off the mower and disconnect the power cord before inspecting for damage.
- ◆ Keep your hands and feet away from the mower's blades. Never reach under the mower for any reason while the mower is operating and make all adjustments with the motor off.
- ◆ Before mowing, walk around the area in which you will be working to remove any objects like sticks, glass, metal, wire, stones and string that could cause injury or damage equipment. Nails and wire are the most hazardous objects thrown by mowers, capable of killing bystanders.
- ◆ Always keep children away from riding lawnmowers or garden tractors. Each year, about 75 people are killed and about 20,000 are injured on or near riding lawnmowers and garden tractors. One out of every five deaths involves a child. In addition, more than 800 young children get run over or backed over by riding mowers each year. This happens when children fall while being given rides, or when they approach the operating mower. Children should never be in the yard

while you're mowing, and they should never ride on the mower.



### *Lawn And Garden Tools:*

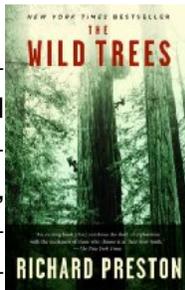
- ◆ Always look for the UL listing mark before purchasing a power tool, garden appliance or any other electrical product. The UL listing mark on a product means that representative samples of that product have been tested to stringent safety standards with regard to fire, electric shock and related safety hazards.
- ◆ Before using any appliance or tool, read and follow the manufacturer's use and care instructions.
- ◆ Before each use, inspect tools for frayed power cords and cracked or broken casings. If the product is damaged, don't use it or attempt to repair it yourself. Return the product or have a qualified repair shop examine it.
- ◆ Always wear proper attire. This includes, sturdy shoes with slip-resistant rubber soles, long pants and long-sleeved shirts, close-fitting clothes, eye protection, heavy gloves, hearing protection when needed. Keep your clothing, hands and feet away from cutting blades at all times.
- ◆ Never wear jewelry when working with tools because it can get caught in moving parts.
- ◆ Don't allow tools to get wet unless they are labeled "Immersible." Never work with electric power tools or mower in wet or damp conditions. For protection against electrocution, use a ground fault circuit interrupter (GFCI). GFCIs come in several models, including portable plug-in types and as part of some extension cords.
- ◆ Handle gasoline carefully. Remember never to fill gas tanks while machinery is operating or when equipment is still hot. Do not fuel equipment indoors. Wipe up spills. Store gas in an approved container away from the house. Finally, never smoke or use any type of flame around gasoline.

## GREAT GREEN BOOKS FOR SUMMER

Summer. What better time to lie on the grass and kick back with a book? In fact, why not try out some of the newest eco themed books. The only problem is many of those books about the environment seem kind of...well, homework-y. Well, here's a round up of the hottest entertaining eco books of the season.

### *The Wild Trees: A Story of Passion and Daring*

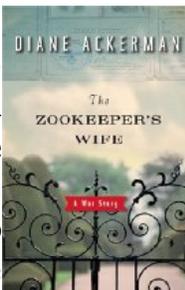
Richard Preston, Random House, 2007  
Master storyteller Richard Preston follows a motley group of professional and amateur botanists into the canopies of the tallest trees in the world, where they explore a sky-high ecosystem almost entirely unknown to humans. A great tale of science, adventure, and love.



*Winter Study* Nevada Barr, Putnam Adult, 2008 – The 14th installment in Nevada Barr's entertaining National Park Service mystery series is one of her darkest and scariest yet. Our heroine is park ranger Anna Pigeon studying wolves at Isle Royale National Park in Lake Superior. She contends with all sorts of mayhem, from interagency rivalry to bitter cold, to a canine or human with murderous intent.

### *The Zookeeper's Wife: A War Story*

Diane Ackerman, W. W. Norton, 2007 – During WWII, Antonina, the wife of a Polish zookeeper, rescued Resistance fighters and Jews by hiding them in her Warsaw villa and in the empty zoo cages surrounding it. In this real-life historical drama, Ackerman shows how Antonina's love for the animals inspired heroism, while Nazi romanticism about nature led to grossly different acts.

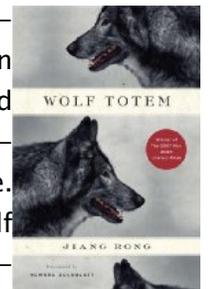
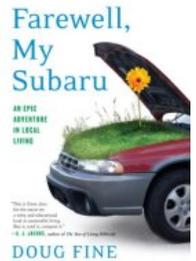


*Farewell, My Subaru: An Epic Adventure in Local Living* Doug Fine, Villard, 2008 – A breezy journal of Fine's attempts to live a low-carbon life in rural New Mexico, despite his lack of gardening and electrical skills. After a year of wrestling with weather, goats, and tax assessors on the Funky Butte Ranch, his extraordinary undertaking makes one thing clear: It

isn't easy being green. In fact, his journey uncovers a slew of surprising facts about alternative energy, organic and locally grown food, and climate change.

*World Made By Hand* James Kunstler, Atlantic Monthly, 2008 – An absorbing and disturbing novel about the near future. After a constellation of plagues, war, disease, declining oil supplies, climate change fracture U.S. society into isolated outposts, former insurance salesmen and software executives are forced to grow their own food, build their own houses, and defend their communities against violence. Kunstler's keeps the reader guessing.

*Wolf Totem* Jiang Rong, Penguin, 2008 – A runaway best-seller when it was first published in China in 2004, *Wolf Totem* follows a young Chinese intellectual to the Mongolian steppes, where he raises a wolf cub and watches as the influx of Chinese bureaucracy changes Mongolian culture. Thick with political implications, *Wolf Totem* also offers some amazing descriptions of wolves on the hunt.



*Bonk: The Curious Coupling of Science and Sex* Mary Roach, W.W. Norton, 2008 – The planetary consequences of unchecked reproduction is a pretty fundamental environmental issue. Science writer Roach puts the steam in green with her hilarious tour of sex research, which includes all manner of odd characters and contraptions.

*The Last Flight of the Scarlet Macaw: One Woman's Fight to Save the World's Most Beautiful Bird* Bruce Barcott, Random House, 2008 – Barcott follows the "Zoo Lady" of Belize as she battles a hydropower dam and attempts to save her adopted country's last nesting site for scarlet macaws. A larger-than-life character who once worked as a circus-tiger trainer, Sharon Matola faces her many foes with determination, a big mouth, and a passion for wildlife.



**THE ELUCIDATOR**

Office of Surety, Safety and Environment (SSE)  
U.S. Army Medical Research Materiel Command  
MCMR-ZC-SSE  
504 Scott Street  
Fort Detrick, MD 21702-5012

**SSE Staff Contacts:**

Cliff Wendel, Chief SSE  
Phone: 301-619-8313  
E-Mail: cliff.wendel@amedd.army.mil

Geoff Phillips, Safety Officer  
Phone: 301-619-8806  
E-Mail: geoffrey.phillips@amedd.army.mil

JoLane Souris, Environmental Officer  
Phone: 301-619-2004  
E-Mail: jolane.souris@amedd.army.mil

Cavelle Williams, Safety Protocol Review  
Phone: 301-619-6035  
E-Mail: cavelle.williams@amedd.army.mil



*Visit us at:*

<http://mrmc-www.army.mil>

***Reminder***

*For all accidents, no matter how minor,  
specific forms documenting the incident must be submitted to your Safety Office.*

*Military: DA Form 285-AB-4*

*Civilian: DOL Claims Forms CA-1 or CA-2*

*All employees requiring medical attention must visit your local Occupation Health Clinic as soon as possible post mishap.*