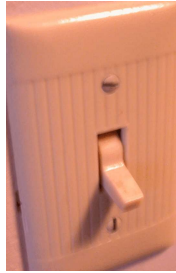


## Save Energy!



Reduce pollution from power generating plants by using energy efficient lamps and turning lights OFF when not needed.



## Reduce Glare!



Make a Safer and more secure night time environment. Glare and harsh lighting creates shadows and causes poor visibility.

## Restore Our Natural Skies!



Help bring back our Natural skies so that everyone can enjoy the night time beauty above and we can sustain and grow our \$2.3 Billion optics industry.

## Reduce Harm to Wildlife!



Minimize the harm to insects and wildlife by not disrupting their seasonal cycles, habitat,



mating and foraging by introducing artificial light. Be sure all outdoor lights are off when not needed.

## A Few Pima County, Arizona Outdoor Lighting Codes

(simplified - see specific codes on our web)

- \* Decorative Lights must be turned off by 11 PM or at closing time for Businesses if after 11 PM.
- \* Holiday Lights are allowed from Thanksgiving to January 15<sup>th</sup> only. Turn them off by 11 PM.
- \* Quantity of unshielded lights limited by lot size, most residences would be restricted to one or two unshielded 60 watt fixtures including porch lights.
- \* Each unshielded fixture shall not exceed 3,000 lumens of light. Larger pole lights exceed 3,000.
- \* Flood and spot lights must be pointed downward below a 45 degree angle from horizontal.

### JOIN THE International Dark-Sky Association (IDA)



Help Foster these  
Educational Activities  
(520) 293-3198

Web Site:  
[www.darksky.org](http://www.darksky.org)

Memberships start at \$50  
They are fully tax deductible

*Donations are Always Appreciated!*

Non-Profit Tax deductible 501(c)3

### PARTICIPATE WITH THE Southern Arizona Section of IDA (SA-IDA) to Help with Local Initiatives

Monthly meetings are usually on the 2<sup>nd</sup> Wednesday  
5:30 PM, 3225 N. First Ave., Tucson, AZ.  
All are welcome to participate in our meetings.

Web Site: [www.sa-ida.org](http://www.sa-ida.org)  
E-Mail: joe at sa-ida dot org  
SA-IDA, (520) 575-7126

# “GO GREEN” with Responsible Outdoor Lighting



## Responsible Lighting Is..

Using Fully Shielded Light Fixtures

Shining Lights Downward Only

Using Only The Amount of  
Light Necessary

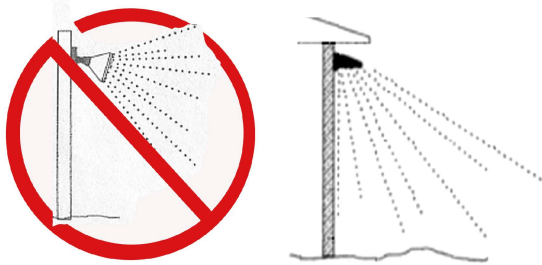
Turning Lights On Only When Needed  
and OFF When Not Needed

Using Energy Efficient Lamps

Exceeding All Outdoor Lighting Codes  
for your area

## Keep Lights Down

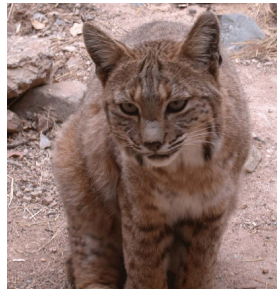
It is estimated that the US wastes more than \$5 million in electricity each night by using poor lighting fixtures which radiate light skyward that significantly contribute to Light Pollution. This wasted energy requires about 50 medium size coal powered generators (burning 15,300 tons of coal daily) or 5,000 wind turbines to generate 5 million kilowatts of power.



## Select Energy Efficient Sources

A typical 100 watt incandescent light bulb puts out about 1800 lumens (85% goes to heat) , a 25 watt compact fluorescent bulb puts out the same lumens but uses 75% less energy and the lamp will usually last 5 to 10 times longer. Compact fluorescent bulbs should be recycled as they contain very small amounts of mercury (return them to the store where you purchased them).

## Effects on Wildlife..



All living things have cycles driven by light and dark periods to keep them in sync. If these periods are disrupted then animals can become lethargic, get disoriented, have their mating and foraging patterns disrupted, and be more susceptible to predators. Animals and insects have evolved over millions of years and we have changed their habitat in the last hundred years. Humans can close shutters and change their environment, animals and insects can only leave the area or try to adapt with consequences. In our area there are more nocturnal creatures than not. Many are more active at dusk and dawn, but dusk and dawn are disrupted when outdoor lights are left on? Also, their eyes are slow to adapt when coming into lighted areas and this could be fatal.

Bats become lazy and do not perform normally if huge sources of moths are swarming around outdoor lights. The moths will die from exhaustion, they should be pollinating cactus blooms and other night blooming plants. Migrating birds can become disoriented and become lost and die. Lighted buildings and towers are often fatal to birds flying at night (the photo shows rows of dead birds collected after one night of collisions). Millions of birds are killed each year. See [www.flap.org](http://www.flap.org) for more information. Sea turtle hatchlings can become disoriented from beach condo lighting and not make it to the ocean and die. Light and temperature can have huge effects on fish migration, spawning, foraging, schooling, predation risk, and behavior. The list goes on and on.



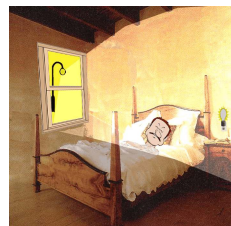
Use flashlights at night to save energy and to minimize disruption to wildlife. Flashlights save energy and are more efficient and effective than trying to cover every square inch of paths and walking areas with lights. Use properly aimed motion detectors to momentarily turn on lights in carports , parking areas and front porches.

## Effects on Plant Life...

Many plants do not generate healthy large blooms if subjected to artificial light at night. Two known examples are the Poinsettia and the Christmas Cactus. Plants are sensitive to their environment and need periods of light and darkness for normal growth, blooming and reproduction. Light is the most important environmental signal to plants. Most plants develop stem growth during darkness and leaf growth during light. Both are important for healthy plant growth.



## Effects on Human Health...



Dark sleeping areas are extremely important for the body to be able to produce proper levels of melatonin. Melatonin has anti-oxidant properties that help fight disease, especially certain types of cancer. Dr. Stevens and Dr. Blask have done extensive research and studies correlating low levels of melatonin and the increased growth rate of breast cancer, up to eight times faster. Be sure no lights shine in your bedroom and no lights or TVs are left on at night. Keep a flashlight by your bed for emergencies. If you must use a night light, use a dim red light, white, green, and blue lights are more harmful.

## More Information...

See our web for more information ([www.sa-ida.org](http://www.sa-ida.org)). A "Wreaking Havoc" narrated Power Point presentation with more information on these topics is available to download and view. Also, the book "Ecological Consequences of Artificial Night Lighting" (Island Press) is an excellent resource.