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Welcome to How YOU Can Make \$\$ in Green Pest Management



IPM Institute of North America, Inc.

Harnessing Marketplace Power to Improve Health, Economics and Environment

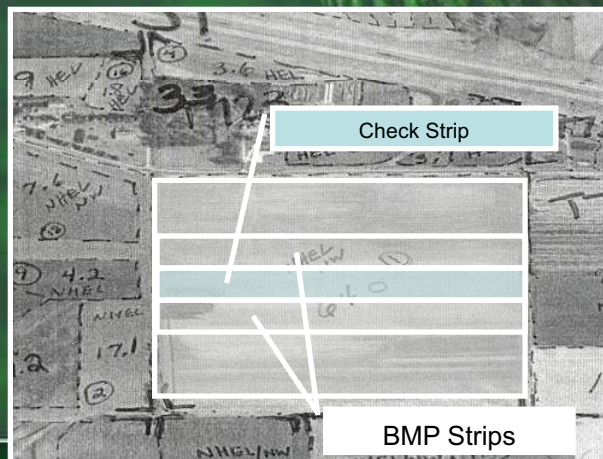
*2008 US EPA Pesticide Policy Dialogue Committee Member
2007-2008 USDA North Central IPM Center Advisory Member
2004, 2005 EPA Pesticide Environmental Stewardship National Champion
2005 EPA Children's Health Recognition Award Winner
2003 EPA Region V Recognition Award Winner*

www.ipminstitute.org

IPM Institute

Harnessing marketplace power to improve health, economics and environment

Agriculture



Communities



Sixth International IPM Symposium
Portland OR, March 24-25, 2009



Sixth International
IPM Symposium

BUYERS Care!

ECO LABEL EXPLOSION!

“A seal or logo indicating that a product has met a set of environmental or social standards.”

- *Organic growing at 20% year*
- *Many new eco-labels on the bandwagon (www.eco-labels.org)*
- LOHAS segment: 30% = 63 million US buyers
- Green building, cleaning, chemistry, health care, clothing, consumer electronics...
- Buy stock in eco!



We have work to do!

- *Up to 1 in 4 children in cities have asthma (6% nationally). Cockroaches, dust mites, pesticides are prime causes/triggers. Childhood asthma treatment costs \$3.2 billion per year!*

– Center for Disease Control

- *New York City childhood asthma hospitalization rates are 3-4 times the national average.*

– NYC Department of Health and Mental Hygiene

- *West Nile virus, encephalitis, bed bugs...*



IPM (& Green Pest Mgt.) Works!

- **IPM contract specs and oversight reduces pesticide use and pest complaints by 90%.**
 - Greene and Breisch, *J. Econ. Entomol.*, 2002
- **IPM schools had little pesticide residue vs. conventionally treated schools which had residues on baseboards and walls.**
 - Williams et al., *J. Econ. Entomol.*, 2005
- **IPM training model in ten school districts reduced pesticide applications by 71% and pest complaints by 78%.**
 - Gouge et al., *American Entomologist*, 2006




AGENDA

- *History Lesson*
- *IPM: Our Foundation*
- *Green Pest Management*
- *Your Green Business*
- *Green Methods*
- *Review and Quiz*

What's New from Industry





Our goal for you:
Have fun, do good work
and make lots of money!



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History

Where are we and how did we get here?

WHY HISTORY?

**"Those who cannot learn from history
are doomed to repeat it."**

—George Santayana

**"The main thing history can teach us is that human actions
have consequences and that certain choices, once made,
cannot be undone."**

**They foreclose the possibility of making other choices and
thus they determine future events."**

- Gerda Lerner



History of Pest Management

The good old days...

**Plagues were punishment
from the gods.**



**Early IPM: Grooming
to remove parasites
makes for healthier,
happier relationships.**



More Early IPM

Cultural

resistant varieties,
adjusting planting time

Mechanical

hand picking pests off crops
burning crop stubble
heating and cooling stored products
washing, sifting food products

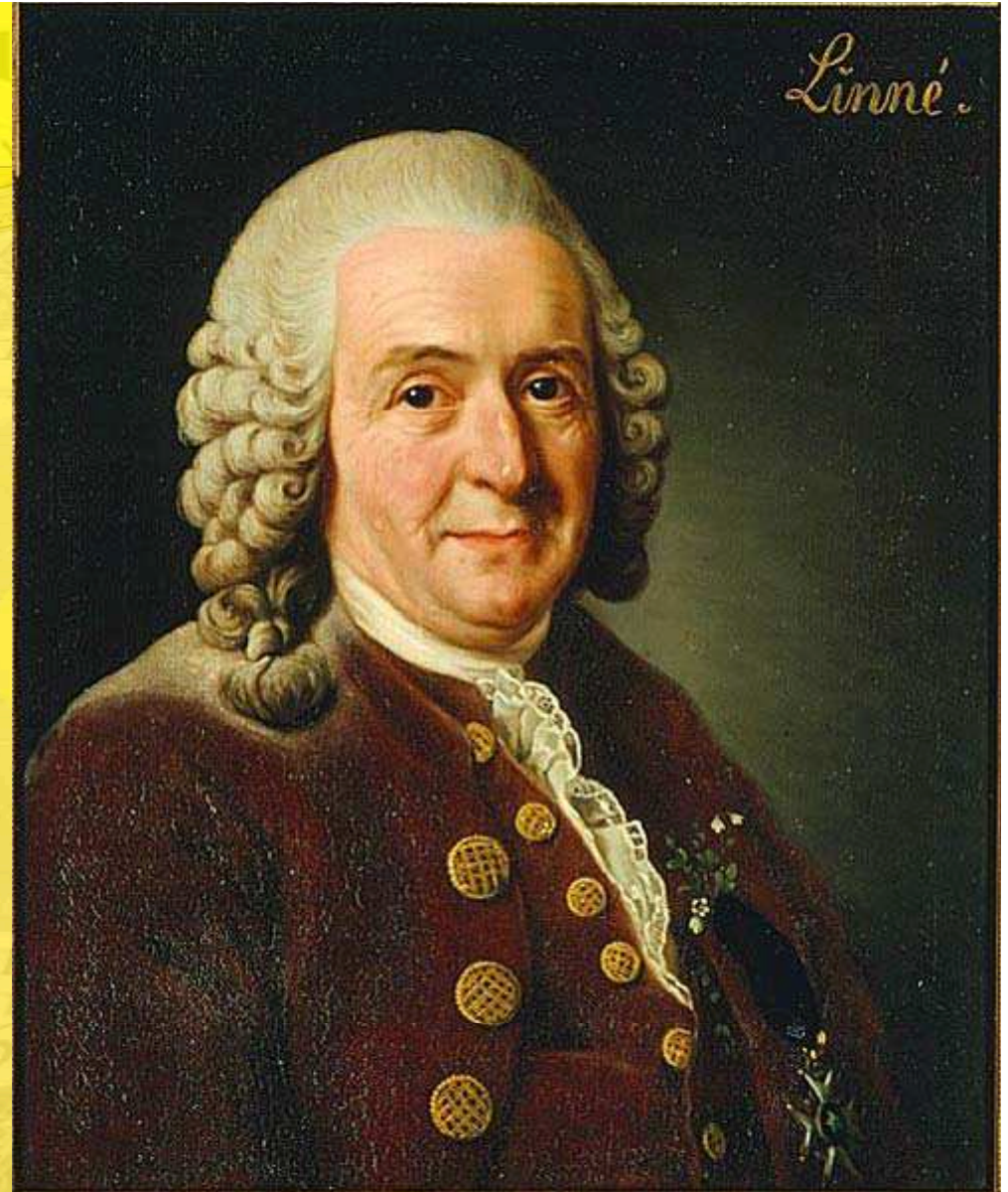
Chemical

ashes, lime, red pepper, sulfur,
tobacco, whitewash and glue

Biological

1752 – “every insect has its predator which follows and destroys it. Such predatory insects should be caught and use for disinfecting crop-plants.”

- Linnaeus



Birth of Manufactured and Synthetic Pesticides

Pre 1900s, all agriculture was “organic”.

What about “urban pest management?”

1800 – Only 1.7% of the world’s population live in towns

– “home remedies”, e.g., bed legs in kerosene tins for bed bugs

Pesticide “manufacturing” born

1870 – Pyrethrum production begins in California

1885 – Bordeaux mixture invented (copper sulfate and lime)

1889 – Entomological Society of America founded

1900 – about 100 deaths/yr . due to plague in US (fleas, rodents)

1905 - kerosene for mosquitoes /yellow fever ; cyanide for bed bugs

1916 – first bait for Argentine ants

1920 – dinitrophenols, paradichlorobenzene (from explosives mfg.)

1933 – National Pest Control Association founded

1939 – DDT insecticidal properties discovered (crop pests, lice mosquitoes), fungicide/herbicide arsenal grows



Tarnish on the “Silver Bullet”

**1935 – US pesticide use: 50 million lbs., mostly ag
1940s**

- **Codling moth becomes resistance to arsenicals**
- **Apple exports rejected over arsenic residues**
- **Secondary pest outbreaks**
- **Accumulation of pesticides in the environment**
- **Pesticide poisonings increase**



M-2



F-3

Pesticides Use Grows, Green Seeds Planted

**1985 – US pesticide use reaches 1.2 billion lbs., 25-fold increase
5 lbs./person/year'; 400 million lbs. in non-ag uses
42% of the world's population live in towns**



Progress and Problems

1959 – “Integrated Control” (multiple methods), alfalfa aphid

1962 – Silent Spring

1963 – Bald eagle down to 416 nesting pairs in continental US

1970 – “Pest management”, we manage, not control pests

1970 – Fertility problems in pesticide manufacturing workers

1972 – FIFRA passed. EPA bans DDT.

**1976 – Apple and Smith, “Integrated Pest Management”
(insect, disease, weed, nematodes)**

**1979 – Jimmy Carter, IPM is “system approach... reduce pest damage to
tolerable levels...variety of techniques...when necessary and appropriate
chemical pesticides”**



The Green Trend Continues to Build

- 1980 - Transition to cockroach bait formulations begins in earnest.**
- 1990 – Organic Food Production Act, 2001 Federal Organic Rule Established.**
- 1993 - EPA Reduced-Risk Initiative cuts time to register less toxic products.**
- 1996 – Food Quality Protection Act passed to cut pesticide risks from food.**
- 1995 – Genetically modified crops planted.**
- 1998 – IPM Institute of North America founded.**
- 2000 – National Pest Control Assoc. becomes Natl. Pest Management Assoc.**
- 2002 – Greene and Briesch report 90% reduction in pest complaints and pesticide use in government buildings using IPM.**
- 2004 – Chlorpyrifos, diazinon decline in infant blood after EPA restricts use.**
- 2003 – Conventional pesticide use begins to decline, 3% drop per year.**
 - First IPM STAR Certified School System (NYC)**
- 2007 – 50% of the world's population (87% of US!) live in towns.**
 - Bald eagle delisted from threatened species list.**
 - NYC joins San Francisco, others, with specialty regs re pesticide use**
- 2008– Specialty regulations in 19 states call for IPM in schools.**
 - NYC releases first annual report on pesticide use by city agencies.**



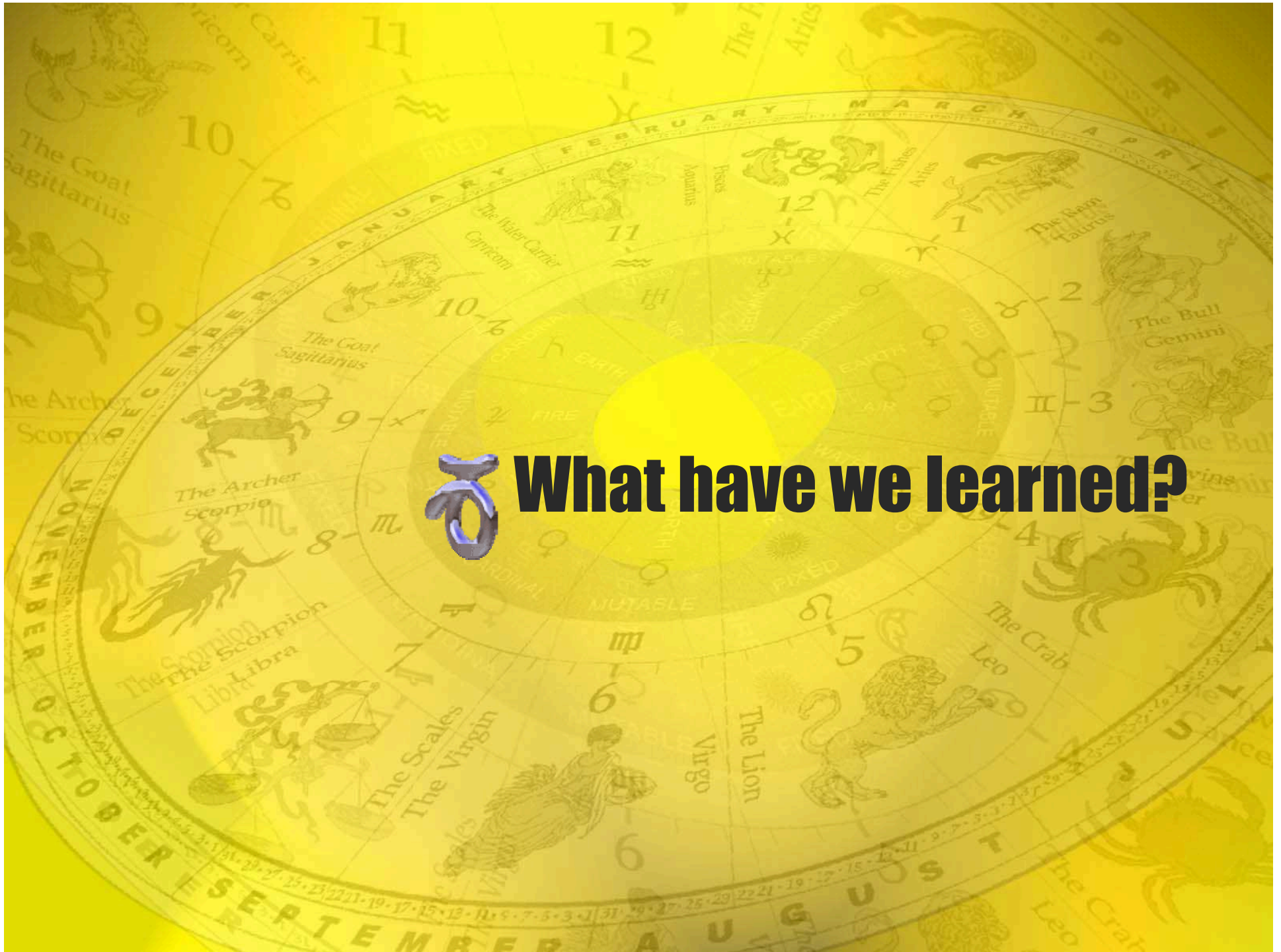
Miles to go before we sleep...

- Malaria continues to kill more than 1 million annually worldwide.
- Asthma affects 6% of US children, up to 25% in inner cities
- Global economy introducing new pests constantly.
- Humans, animals, birds, fish, surface water, ground water contaminated with multiple pesticide residues and other chemicals.
- Average adult has 91 chemical contaminants, 20% are pesticides or pesticide- related; many are known toxins.
- IPM reduces pest problems and pesticide use and toxicity, let's make more IPM happen!





What have we learned?



LESSONS

- **Over-reliance on broadly toxic pesticides and unwise use has caused many problems in agriculture and communities.**
- **There will always be pests and we'll always need pesticides.**
- **We're getting smarter every day about how to manage pests and improve health and environment.**
- **Everyone is pitching in from manufacturers to pest management professionals to customers to regulators to non-profits. For all chemical products, not just pesticides.**
- **"Natural" pesticides are not new or a "silver bullet".**
- **IPM is as old as common sense.**
- **Green pest management is a trend that started more than 50 years ago.**
- **Green is here to stay in all walks of life.**





 **The Future?**

Crystal Ball

- **Ours is a growth business!**
 - World population continues to grow.
 - Trend towards urbanization continues to increase pest pressure.
- **Professional pest problem solvers , not pesticide applicators, will capture growing market share.**
- **Increasing regulation will continue to make it tough for non-professionals to survive.**
- **Improving health and environment will be increasingly more important selling points for our industry.**
- **Green means less toxic to most. We can do that!**



ACKNOWLEDGEMENTS

PHOTOS

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USDA ARS Photo Gallery

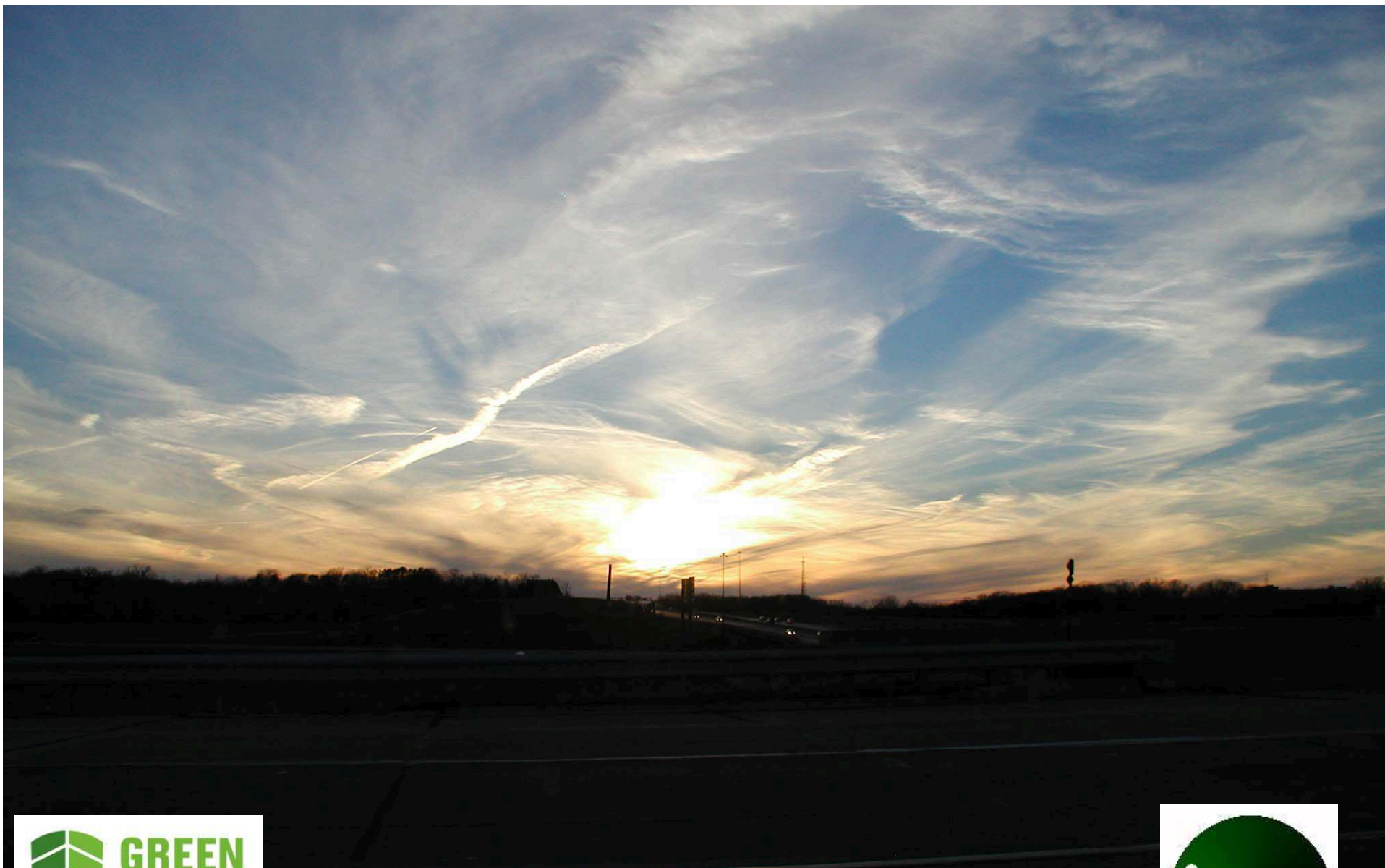
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Thank you for all that you do!



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