ARE WE KILLING MOTHER EARTH?

The Greenhouse Effect and the Animal Kingdom

A re we committing matricide, killing the Earth, mother of us all? The climate is changing. Droughts ravage parts of Africa, floods sweep Asian towns and villages away, hurricanes raze through northern Europe and the Caribbean, and the 1980s saw the six hottest years worldwide since records began.

Many environmentalists are now reaching unanimity over the potentially devastating social, economic, and health consequences of the intensifying global greenhouse effect caused by an increase in carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons in the atmosphere. A variety of factors, ranging from the burning of fossil fuels to the destruction of forests that naturally help remove excess carbon dioxide from the atmosphere, is contributing to an increase in the planet's temperature. Serious droughts, crop losses, severe storms, and floods are predicted consequences of this global warming. As the ozone layer is destroyed by various chemicals, particularly chlorofluorocarbons, this natural filter of ultraviolet rays will no longer protect the Earth's inhabitants from harmful solar radiation. Ultraviolet rays weaken the immune system, increasing the body's susceptibility to disease and animal and human populations to disease epidemics.

The greenhouse phenomenon, caused by the accumulation of excessive and unbalanced quantities of solar heat-trapping gases, especially carbon dioxide, is predicted to double by the middle of the next century. The latest scientific consensus is that this will mean a 4 degree Fahrenheit warmer world by the middle of the next century!

However, climate researchers studying global warming have not yet reached an overall consensus as to its severity, control, and long-term consequences. This is, in part, due to the questionable fidelity of computer simulation models, which reflect, in part, the inherent limitations of the new science of predictive ecology and to political pressures from the industrial sector, which fears economic losses from legislative initiatives and changes in consumer habits aimed at reducing fossil fuel usage and the emission of greenhouse gases.

Dr. Jerry Mahlman, director of the National Oceanic and Atmospheric Administration, has stated: "The things we can say with confidence, the policymakers are not interested in, and the things the policymakers are interested in, we don't know with much confidence." Changes in ocean currents and in the gulf stream could throw all conservative forecasts off, while worst-case scenarios that predict a much higher rate of global warming imply such drastic changes in industry and public policy as to be impractical and unrealistic.

In testimony before the Senate Committee on Agriculture, Nutrition, and Forestry, Dr. John F社or of the National Center for Atmospheric Research, Boulder, Colorado, emphasized:

"There is a strong scientific consensus today that the climate will soon warm at a rate exceeding any seen by human civilizations. These changes will..."

Above: A spotted owl, whose existence is threatened by deforestation, has become the lightning rod for controversy between environmentalists and loggers in the Pacific Northwest. Opposite: Power plants have been implicated in acid-rain damage to needle-bearing trees.
will be fast enough to make adaptation diffi-
cult and expensive. There is a need for prompt
measures to stop the process.

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The greenhouse effect and destruction of
the ozone layer must be viewed in the con-
text of other global environmental problems,
which, in functioning together, are responsi-
bale for the deterioration of the quality of all
life on Earth. These include the pollution of
water and oceans with agricultural chemicals
and industrial wastes that also pollute the air
and poison the food chain; the destruction of
forests and lakes and acid rain; the spread of
disease and destruction of both man and
its natural habitats by animal product or meat-
based agriculture and other ecologically un-
sound practices.

Harm to Animals
What does the global greenhouse effect
mean for the animal kingdom? The legacy is
suffering, disease, extinction as a conse-
quency of climate change and emergent
infections that destroy animals' life-support
systems, including vegetation and dependent
food sources. Unable to reach greener pas-
tures and cool, clear waters, animals will
remain inside their confined barns, cow-
rows, and suffer in lakes and oceans. Only
a few species will be able to migrate to find
and colonize less inhospitable habitats, and
the competition for such places will be intense
and probably result in rapid habitat degrad-
a. The majority of aquatic and terrestrial
species will face the chaotic and desperate
conditions of a dysfunctional planet, as will
billions of people. Competition will be inten-
sified by the mass migration of people dislocated by floods, droughts, crop failures,
and widespread famine and disease to more hospitable latitudes. People and animals will,
thus, be thrown into more direct competition
than ever before, competition that will be in-
tensified further by the anticipated doubling
of the human population within the next forty
years. Recognizing that the fate of the Earth
and all that dwell therein are interconnected,
John A. Hoyt, president of The
HSUS, has said:

"We are all increasingly aware of our threat to the environment which portends severe consequences for humans and other animals alike. Consequently, the HSUS is actively working with various environmental and conserva-
tion organizations to preserve both our planet and the life it sustains. Indeed, we believe our commitment to this concern is one of
great importance, for though the protection of animals from suffering and abuse is our im-
mediate concern, it will be a vacuous victory
if, at the same time, the world about us con-
tinues to disintegrate."

Even a slight increase in ambient temper-
ate can trigger changes in animals’
physiology and behavior, which, if not linked
to increased human suffering, may enable an informed public can.

generate the necessary concerted action and
collective will to help prevent this imminent
doom. Some ecologists believe that the predicted
rise in sea level could be the most serious im-
portant of the greenhouse effect on wildlife in
the United States. The worst-case scenario must
include the additional impact of agrichemical and industrial pollutants. These would
become more of a problem as the natural distrin-
tion processes within the soil and aquatic eco-
systems become increasingly dysfunctional as
a result of the greenhouse effect and intensified
ultraviolet radiation.

The HSUS is firmly resolved to inform its
more than one million constituents of the
serious implications, for humanled and ani-
mal alike, of the pending global ecolog-
ical and human crisis.

Some kinds of coastal algae produce di-
methyl sulfide, which turns into sulfur di-
genesis, some environmental pollutants that
cause algal bloom (eutrophication), notably nitrates from agrichemical fertilizer,

farm animal wastes, and raw sewage, may
contribute indirectly to acid rain.

Nitrates fertilizers
also contribute to the
 greenhouse effect by interfering with the abil-
y of soil microbes to remove methane from the
atmosphere, according to Dr. Paul Steud-
ler and coworkers of the Woods Hole Marine
Biological Laboratory.

Although there is more carbon dioxide than
methane in the atmosphere (because of auto-
mobiles and other fossil fuel sources of car-
bon dioxide), methane is of concern because it
traps heat twenty times more than carbon
dioxide.

Agriculture’s significant contribution to the
 greenhouse effect is being hotly debated and
disputed by many. However, the Envi-
ronmental Protection Agency reports that
livestock and animal waste accounts for 18 percent of methane’s sources. Clearly, a re-
duction in methane-producing livestock and
better animal-waste management would be
prudent. (Note: If global warming continues
to increase, more hectares of frozen tundra
will thaw to release more methane into the at-
mosphere, thus quickening the global warm-
ing process.)

In the New York Times review of this EPA
study, Dr. Ralph Cicerone, head of geo-
Sciences at the University of California at
Irvine, is quoted as saying, “When you look at
the cattle source, it’s got to be 80 or 100
million tons a year. Then you know cattle are
a big part of the answer.” Cicerone would add, so are pigs, whose wastes are now a major cause of excessive soil, groundwater, and coastal
nitrification, which fuels the greenhouse
effect.

Research in the United Kingdom and Hol-
den has linked the livestock industry with
acid rain. As noted in the previous article,
the liquid slurry excrement of cattle, stored
in lagoons and sprayed on fields, releases
ammonia into the atmosphere. This inter-
tacts with sulfur dioxide (an industrial

Our planet can no longer . . . sustain those
demands . . . that are destroying
our life-support systems.

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After a clear-cutting, provides little
sustenance for a jupar (leap) seeking shelter in a dead tree.

Denuding the planet of trees contributes to global warming.

have major impacts on agriculture and could
devastate uprooted forests. These changes
will be fast enough to make adaptation diffi-
cult and expensive. There is a need for prompt
steps to reduce emissions of heat trapping gases, especially carbon dioxide.

Dr. Firor testified, “There are indications
that the centers of mid-latitude continents, for
example, the U.S. Midwest, will have less soil
moisture during the growing season than they
do today; and that, ‘One effect that will be
truly global will be the rise in sea level...’”

In his review of major contributing
factors to the greenhouse problem, Dr. Firor said,
the second most important gas is meth-
ane...most of it comes from...municipal waste dumps, rice paddies, and the intestines
of cattle and termites.

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methyl sulfide, which turns into sulfur di-
genesis, some environmental pollutants that
cause algal bloom (eutrophication), notably nitrates from agrichemical fertilizer,