Wild Heritage

By Todd Tanner

When *Sporting Classics* Publisher Chuck Wechsler and I discussed an article on global warming earlier this year, Chuck was adamant about one point. He wanted me to present both sides of the issue. So let's jump right to the debate.

There are currently two major schools of scientific thought on global warming. The first argues that human-caused global warming is a serious threat, and that unless we make huge cuts to our greenhouse gas emissions in the very near future, people all over the world will begin to suffer from catastrophic weather events like hurricanes (think Katrina), droughts, floods, heat-waves and coastal inundation.

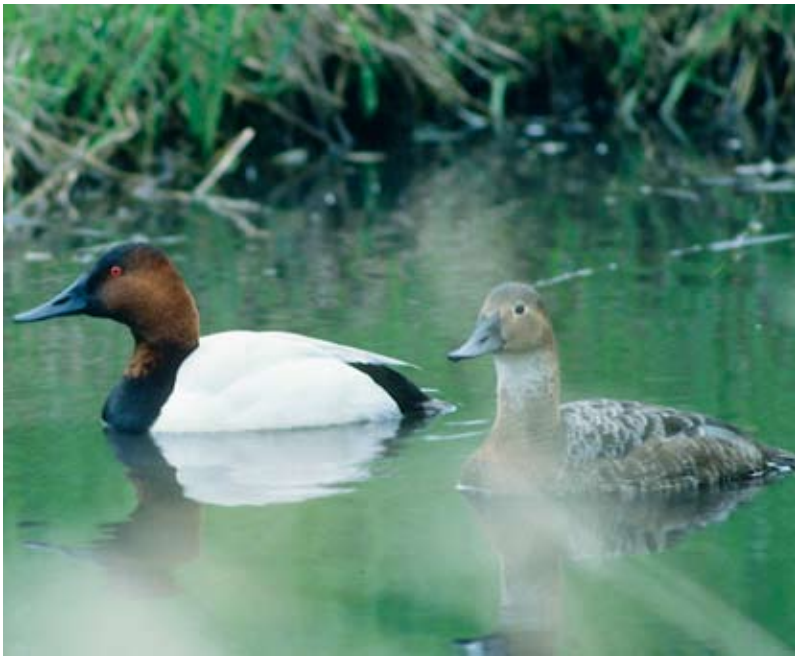
The best name for this depressing scenario isn't climate change or global warming, but *climate chaos*.

As for the second school of thought . . . well, these experts are decidedly less optimistic. Like their peers, they're convinced that global warming is a direct result of humanity's reliance on fossil fuels. But these climatologists believe that we've waited too long to address the situation. They're convinced that we're going to suffer from at least some of the effects of climate chaos, regardless of how we react in the future.

Cheery thought, eh?

"*But wait!* Is global warming even a serious problem? Or if it is a problem, isn't it a natural phenomena that we can't do anything about?"

Global warming is causing climate chaos. But it's not too late. All of us must work toward finding a solution to this crisis. Not tomorrow. Right now.



CHUCK WECHSLER

Global warming will alter rainfall patterns, possibly causing a dramatic loss of wetland habitat essential to waterfowl.

I hate to be the bearer of bad news, but there is no substantive scientific disagreement on the reality of global warming. Or on its causes. And despite what you've heard from the oil industry, there hasn't been for some time. The scientific community is united behind their science, which states that the earth is heating up because we – that's you and me, along with six billion other people – are dumping unimaginable quantities of greenhouse gasses (carbon dioxide, methane, etc.) into the atmosphere. These gasses are upsetting the delicate balance between the energy the earth absorbs and the energy it reflects back out into space. You could even say that greenhouse gasses act like cloud cover. No clouds at night? Lots of radiational cooling. Clouds? That's right, it stays warmer.

Or if it helps to think of the situation from a more personal perspective, imagine walking in the woods on a beautiful, sunny, 80-degree day. Then picture taking that same walk in a heavy black coat that captures the sun's energy yet doesn't allow any heat to escape.

Did you enjoy your stroll? Because wandering around in that dark coat is a pretty good analogy for global warming. In essence, we're wrapping the planet in insulation and changing the delicate balance of "energy in" to "energy out" that we've enjoyed since the end of the last ice age.

Now, assuming that I'm right about all this – and I'll mention a few easy ways to satisfy your curiosity on that point at the end of the column – let's set aside the larger issues of how climate chaos will affect things like our weather, our economy and our food supply and

take a look at how it will likely impact our hunting and fishing.

Here's what we know right now. The earth, the atmosphere and the oceans are all getting warmer and as this happens, individual ecosystems will need to adapt to constantly increasing temperatures. Some will be able to change and acclimate successfully. Others won't.

For example, there's substantial evidence that fisheries in the Pacific are suffering from an increase in water temperatures that prevents "upwelling," a seasonal infusion of cold, nutrient-laden water that supports both phytoplankton and zooplankton. Without enough cold water to sustain the food chain, fish like salmon and steelhead simply can't get enough to eat. Of course, no one can predict with any degree of certainty whether our coastal fisheries will eventually adjust to this rise in water temperatures. It's simply too early to tell. But we do know that our oceans are warming quickly and that warmer ocean temperatures will have a serious effect on the marine environment for the foreseeable future.

We also know that rainfall patterns will change across the U.S., with many scientists predicting less rain and more pervasive drought for large areas of the Lower 48. How will water-dependent species – for example, ducks and geese – react to a dramatic loss of wetland habitat? Once again, no one can really say for sure. Although the upside for waterfowl is certainly hard to see. As the EPA states on the global warming portion of its Web site: "The loss of Louisiana's wetlands could have a particularly adverse impact on international migratory birds that travel along the Mississippi flyway. Similarly, the decline in prairie potholes would decrease duck populations."

Obviously, the effects of long-term drought won't be limited to waterfowl. As North America warms and precipitation patterns shift, entire ecosystems will be impacted. We're already seeing this happen in the western United States, where mule deer herds are being stressed by a dangerous lack of rainfall. And it's hard to imagine elk and other game species thriving as temperatures go up, water becomes scarce and vegetation turns dryer and less nutritious.

We've also learned how western trout streams handle insufficient mountain snowpacks, early runoff and higher water temperatures.

Poorly.

Even famous rivers like Idaho's Henry's Fork are wilting under a string of high-temperature/low-water years, with catch rates dropping and far fewer juvenile fish surviving to adulthood.

The Wildlife Society, whose motto is "Excellence in Wildlife Stewardship Through Science & Education," has published a major study on global warming. Here part of the synopsis.

"It is widely accepted by the scientific community that the earth, which has always experienced climate variation, is now undergoing a period of rapid climate change that is enhanced by anthropogenic atmospheric carbon enrichment during the past 100 years. These climatic changes are accelerating and projections for the next 100 years

indicate extensive warming in most (but not all) areas, changing patterns of precipitation, and a significant acceleration of sea level rise. Other likely components of ongoing climate change include changes in season lengths, decreasing range of nighttime versus daytime temperatures, declining snowpack, and increasing frequency and intensity of severe weather events."

Douglas Inkley, Senior Science Advisor to the National Wildlife Federation and chair of the Wildlife Society committee that wrote the report (titled "Global Climate Change and Wildlife in North America") was succinct in his assessment:

"Global warming presents a profound threat to wildlife as we know it in this country."

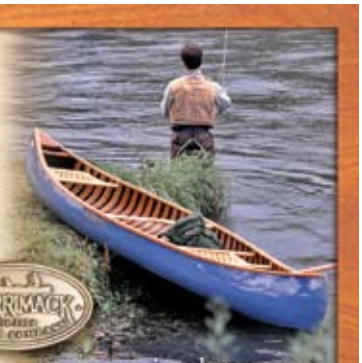
You can't get much more straightforward than that. At least without quoting Dr. James Hansen, climatologist and head of NASA's Goddard Institute For Space Studies: "Global warming is real." Or Republican Senator John McCain: "There is overwhelming evidence that increasing amounts of carbon dioxide [and other gases] are heating up the Earth's climate and that inaction could be disastrous." Or the U.S. National Academy of Sciences: "Greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise."

Let's face the facts. The debate over global warming is history. It's time to act.

So what can we do when our most respected scientists start saying that trout and salmon might disappear from America's rivers in the next forty or fifty years, or that our forests are in danger of massive die-offs due to global warming-induced drought, disease and insect infestation? How do we look our children and grandchildren in the eye and tell them that we sat back and fiddled while Rome burned? After all, it's not like we haven't experienced the evidence personally. Ten of the eleven hottest years on record have occurred since 1994. And 2005 turned out to be the warmest year since we started keeping track of global temperatures back in the 1880s.

Here are a few steps you can take right now. First off, write your senators, your congressmen and the President. Tell them to enact strong legislation to roll back U.S. greenhouse gas emissions. They should also fund renewable energy research with tens of billions of dollars at the same time they eliminate counterproductive fossil fuel subsidies and voluntary emissions programs that don't work.

Next, every time you have the opportunity to vote for an elected official, support a candidate who promises to tackle the global warming challenge head on. We don't have time to waste. Not a day, not an hour, not a minute. And keep in mind that climate change – excuse me, "climate chaos" – is a social issue, not a political one. If we're going to have any chance at all of avoiding catastrophic warming, Republicans and Democrats must compete to offer the most



comprehensive, effective and cost-efficient approach to lowering our greenhouse gas emissions. We need to decrease emissions by 60 to 70 percent. That's a huge challenge. Both political parties will have to come to the table.

Remember to vote with your wallet, too. When you purchase your next car, truck or appliance, pick a model that's super energy efficient. Then turn off the lights when you're not in the room. Keep the thermostat set a little lower in the winter and a little higher in the summer. Leave the car in the garage and walk, bike or take public transportation to wherever you're going.

Believe me, I know how all this sounds. This is America and we're used to standing tall and living large. But we literally don't have a choice. It's either put our time, talent and ingenuity into developing a more sustainable way of living, or watch our country wither on the vine. If you think I'm exaggerating the threat, please research the issue and educate yourself. Global warming is a massive problem and we need to get to work on the solution. Not tomorrow. Not next week. Right now.

TO LEARN MORE ABOUT GLOBAL WARMING:

National Wildlife Federation's global warming web site: www.nwf.org/globalwarming/

National Oceanic and Atmospheric Administration's collection of global warming FAQs: http:// lwf.ncdc.noaa.gov/oa/climate/globalwarming.html

Intergovernmental Panel on Climate Change's web site: www.ipcc.ch/

Carbon Dioxide Information Analysis Center's web site: http://cdiac.esd.ornl.gov/

RealClimate.org, working climate scientists writing for the interested public and journalists: www.realclimate.org

The World Meteorological Organization's World Data Center for Greenhouse Gases: http://gaw.kishou.go.jp/wdcgg.html

For those of you who prefer books to the internet, a great place to start is with Elizabeth Kolbert's new *Field Notes From a Catastrophe: Man, Nature, and Climate Change.*

GLOBAL WARMING FACTS

According to the EPA, the U.S. dumped almost eight billion tons of carbon dioxide equivalents into the atmosphere in 2004. That's a huge number. You might ask how that's even possible. Well, think of it this way. Every time you drive your car or truck a mile, you release about a pound of carbon dioxide into the air. (The actual number depends on the type of vehicle you own, road conditions, stop and go versus highway driving, etc. But on average, a mile driven equals a pound of CO2 in the air.)

Consequently, everyone who drives 20,000 miles a year – a number that many of us hit regularly – is responsible for pumping ten tons of greenhouse gas forming carbon dioxide into the atmosphere on an annual basis. Sobering, isn't it? Few people realize that our driving habits are such a huge part of the problem.

While countries like Britain have already reduced their overall emissions, America's numbers are still going up. U.S. greenhouse gas emissions rose 1.7 percent from 2003 to 2004. Those same greenhouse gas emissions are up 15.8 percent since 1990. Which is one of the reasons that worldwide carbon dioxide levels have risen from about 280 ppm in the year 1800, to about 315 ppm in 1958, to 367 ppm in 2000, and to 380 ppm today – a 36 percent increase in just over 200 years.

We also know from analyzing glacial ice cores that today's atmospheric carbon dioxide concentration is 27 percent above the highest levels recorded in the last 650,000 years. And that number is only going to go up as we burn more fossil fuels. Amazingly, the United States, with less than 5 percent of the world's total population, uses 24 percent of the world's energy.

All of which means that global temperatures will keep rising, our polar ice caps and glaciers will keep melting, and extreme weather events will become more and more frequent. In short, we're leaving behind the relatively benign weather patterns we've taken for granted and moving into a new era. Climate chaos.