

**Global Warming and Police
It's More Than Just a "Hot Flash"**

by

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May, 2009

COMMAND COLLEGE CLASS 44

The Command College Futures Study Project is a FUTURES study of a particular emerging issue of relevance to law enforcement. Its purpose is NOT to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This journal article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

The views and conclusions expressed in the Command College Futures Project and journal article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

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Introduction

On August 29, 2005, the United States experienced one of the most traumatic environmental tragedies of all time...Hurricane Katrina. Overall, its ramifications were devastating. In a matter of hours, an entire community was destroyed. Hundreds of families were displaced and government entities were in utter chaos. Food and water supplies were scarce, death toll numbers were astronomical, and public safety resources were in dire straits. New Orleans was in a state of shock. This event truly indicated how ill-prepared we were to deal with such a horrific event.

As traumatic an event as Hurricane Katrina was to our nation, the United States experienced additional environmental complexities not as notably broadcast. In 2004, we recorded a record number of tornadoes, with 1,717 of them crashing into neighborhoods. In 2005, more than 200 of our nation's cities broke all-time heat records. Equally of note is the fact the United States shared the same environmental phenomena as did other countries. Europe experienced a record breaking heat wave in 2003 that killed hundreds of people and Japan encountered 10 devastating typhoons. Not only did India reach all time temperatures of 122 degrees Fahrenheit, but also 37 inches of rainfall in a 24 hour period.¹

Scientists have interlinked these natural disasters with global warming as they are seeing a relationship between rising carbon dioxide levels released into the atmosphere and increasing heat temperatures. This combination, they say, is responsible for these

¹ The Inconvenient Truth, Al Gore 2006

environmental changes causing such cataclysm. Judging from ongoing research, some extreme events closely linked with global warming, such as El Nino and drought, are likely to occur more frequently and intensively, causing aggravated natural ecosystem damages.²

With all the environmental changes associated with global warming, should law enforcement be at concerned? After all, law enforcement has demonstrated its ability to handle isolated catastrophes such as the 9/11 terrorist attack and even such environmental crises as El Nino, but incidents such as these have been non-repetitive with time to recuperate. Given these occurrences, public safety encountered the presented event, provided the necessary emergency relief, and recovered in preparation for the next event.

What happens when these similar affairs become routine and more frequent prompting thousands of deaths in a matter of minutes and for weeks at a time? Will these events finally force departments to mandate physical fitness standards for employees during the course of their entire career? If global warming continues its momentum, agencies will need to adopt stricter physical mandates through hiring practices and enforce fitness standards for those already employed. Furthermore, state and national training standards will need to be re-evaluated to determine current effectiveness given the implications of what appear to be ahead for all of us.

What is Global Warming Really?

Americans watched in horror the devastation brought about by Hurricane Katrina, but did we ever really relate the hurricane to global warming? After all, hurricanes are not new phenomena. So then, what is global warming, really?

² <http://www.edu.cn/20050913/3151509.shtml>

Prior to the Industrial Revolution, the earth's atmosphere was in balance, naturally equipped with a combined supply of carbon dioxide and greenhouse gases (a combination of chemical compounds such as methane and nitrous oxide).³ These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is re-radiated back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. The greenhouse gases keep the surface of the earth warm enough for us to live in, hence the greenhouse effect. Without the greenhouse effect the planet would be uninhabitable.⁴

When the Industrial Revolution took off in the mid 1700's, fossil fuels (carbons-coal and petroleum) were burned to run factories, cars and power plants to produce commodities. As we grew accustomed to these commodities, a seemingly endless demand was created. The more man thrived for these supplies, the more fossil fuels were burned into the atmosphere to run the industries to satisfy the demand. The additional carbons released into the atmosphere from the factories added to the natural supply of greenhouse gases and remained in the atmosphere (and will so for centuries).⁵ As time progressed, the gases have built up beyond the earth's capacity to remove them thus creating an extra thick heat blanket around the earth which is what we call global warming.⁶

Over time, rising temperatures have produced changes in precipitation patterns, storm severity, and sea level commonly referred to as "climate change".⁷ According to assessments by the Intergovernmental Panel on Climate Change (IPCC), "...warming of

³ <http://www.fightglobalwarming.com>

⁴ <http://www.fightglobalwarming.com>

⁵ <http://www.fightglobalwarming.com>

⁶ <http://www.fightglobalwarming.com>

⁷ <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>

the atmosphere and ocean, together with ice mass loss, support the conclusion that it is extremely unlikely that global climate change of the past 50 years can be explained without external forcing, and very likely that it is not due to known natural causes alone.”⁸ In other words, the severity of change in global temperature is largely man-made.

Experts have pointed out that global warming and the increase of the greenhouse gas effect have exerted impact on the natural ecosystems in many areas of the world. These exertions include rising sea levels, glacial recession, frozen soil melting, late freezing and early melting of rivers and lakes.⁹ It is the warm water vapor from the oceans that drives tropical storms, and as the water gets warmer the amount of evaporation increases, providing more fuel for hurricanes. The measured increase in sea surface temperatures are associated with global warming adding that the increase in category 4 and 5 storms.¹⁰

In their analysis of hurricanes- known as typhoons or cyclones in other parts of the world- researchers studied category 4 and 5 storms and analyzed their frequency comparing them from years 1975 and 1989 to years 1990 and 2004. Their analysis revealed that between 1975 and 1989 there were a total of 171 storms. That total increased to 269 from 1990 to 2004.¹¹

Researchers are unable to say rising sea-surface temperatures caused Hurricane Katrina, but studies show the potential for more Katrina-like events to occur. Roger Pielke, director of the Center for Science and Technology Policy Research at the

⁸ <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>

⁹ <http://www.edu.cn/20050913/3151509.shtml>

¹⁰ http://www.usatoday.com/weather/climate/2005-09-15-globalwarming-hurricanes_x.htm

¹¹ http://www.usatoday.com/weather/climate/2005-09-15-globalwarming-hurricanes_x.htm

University of Colorado, said the research “reinforces the view that we should pay even greater attention to preparing for the inevitability of future intense hurricanes striking vulnerable locations around the world. In the context of ever-growing coastal development, the costs of hurricanes are going to continue escalate.”¹²

The Energy Information Administration (EIA) states that world carbon dioxide emissions will increase by 1.8 percent annually between 2004 and 2030.¹³ Much of the increase in these emissions is expected to occur in the developing world, where emerging economies, such as China and India, fuel economic development with fossil energy.¹⁴ Fortunately, a number of countries have recognized the seriousness of global warming and have taken an active approach to help combat its expansion. In 1997, Japan authored two initiatives, the “Green Initiative” and the “Kyoto Initiative” to promote coordinated efforts among developed countries for technological development and energy saving.¹⁵ To date, 141 countries have signed the Kyoto protocols (which does not count the United States).¹⁶ Japan’s philosophy behind these initiatives is quite simple. Since emissions of greenhouse gases from developing countries are predicted to exceed emissions from the industrialized countries around the year 2010 and onwards, it is important to take steps in developing countries to help slow down or halt global warming.¹⁷

Unlike Japan’s efforts to help curb global warming, however, the United States has approached the issue quite differently. According to the Environmental Defense Fund (EDF), the United States took the number one ranking as the top global warming

¹² http://www.usatoday.com/weather/climate/2005-09-15-globalwarming-hurricanes_x.htm

¹³ <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>

¹⁴ <http://www.eia.doe.gov/bookshelf/brochures/greenhouse/Chapter1.htm>

¹⁵ http://www.mofa.go.jp/policy/environment/warm/kyoto_init/kyoto_sum.html

¹⁶ http://www.windows.ucar.edu/tour/link=/headline_universe/earth_science/stories_2004/kyoto_news.html

¹⁷ http://www.mofa.go.jp/policy/environment/warm/kyoto_init/kyoto_full.html

polluter in the world in 2007.¹⁸ The United States had a 20% increase in carbon dioxide emissions since 1990 and will have an additional 15% increase by 2020 if it does not cap pollution. There has been an increase of 78 days by which the U.S. fire season has increased over the past 20 years and as of this writing, there were zero federal bills passed to cap America's global warming pollutions.¹⁹ One would think that with all of the innovativeness of the United States, these statistics are not only surprising but embarrassing as well.

If global warming continues at its current pace, there are several issues that should be of concern to us now and our future generations. In addition to flooding and hurricanes becoming more frequent, storms are going to become stronger. Precipitation will increase across the globe prompting more flooding. Less fresh water will be available and droughts in some parts of the world will become more common. Some diseases will spread such as malaria carried by mosquitoes and ecosystems will change—some species will move farther north while others could become extinct.²⁰ Because of these concerns, it is imperative more steps be taken to slow down global warming. Some of these steps should be considered by the police profession. However, if prevention does not become a reality world-wide, it is imperative for law enforcement to better prepare for the inevitable future climate-induced events.

What the Heck Does Global Warming Have to do With Police Work?

There may be some skepticism about how global warming relates to law enforcement. As research progresses and different implications of global warming are

¹⁸ <http://www.edf.org/article.cfm/contentID=5816>

¹⁹ <http://www.edf.org/article.cfm/contentID=5816>

²⁰ <http://environment.nationalgeographic.com/environment/global-warming/gw-effects.html>

identified and explored, however, it is clear that global warming will have a direct and potentially detrimental impact on the profession. Granted, the impacts of global warming may take a while before most local agencies will have to address the issue, but essential planning is vital during the initial stages so as not to be faced with last minute decision making and panic.

Although there is still a debate as to whether or not Hurricane Katrina can be directly linked to global warming, law enforcement can learn a lot from the event to help better prepare for potential weather challenges ahead. With Katrina, law enforcement personnel experienced both environmental challenges and public safety challenges. Not only were public officials forced to manage chaos and endure the excruciating conditions brought on by the devastation, they had to enforce the law to violators who took advantage of opportunities.

For instance, in the wake of the Hurricane, on August 30, 2005, New Orleans Mayor Ray Nagin ordered 1,500 police officers to leave their search and rescue missions and return to the streets to stop the looting that had turned hostile. Police asked residents to give up firearms before they evacuated neighborhoods because officers desperately needed firepower. Police initially said their first priority was saving lives, but looting got so violent, that became top priority. Tempers flared in the Superdome, and one man actually shot his sister for a bag of ice.²¹ This specific incident demonstrates how quickly the role of the police might change when faced with a large-scale disaster.

When these challenges come to fruition on a larger scale, police officers will be forced to face circumstances that will be personally and professionally taxing to them. They will be in direct contact with human tragedy, and unknown diseases where they

²¹ <http://foxnews.com/story/0,2933,294066,00.html>

may be most vulnerable and susceptible to exposure. This in turn could continue the widespread expansion of the virus to fellow employees and even their families. Law enforcement can learn a lot about responding to catastrophic events by analyzing and debriefing the efforts made by public safety both during and after Katrina.

In the weeks after the Hurricane, reports of increased injuries and psychological strain among New Orleans police officers and firefighters emerged, prompting a health hazard study by the Centers for Disease Control (CDC). They solicited feedback from police officers and firefighters involved with rescue efforts during the aftermath of the storm.

The CDC found that upper respiratory and skin rash symptoms were the most common physical symptoms reported and lacerations and sprains were the most common injuries.²² A substantial proportion of police officers and firefighters had injuries and indications of mental illness, such as depression or symptoms of posttraumatic stress disorder (PTSD). The inherent dangers of the work were compounded by the environmental hazards and personal stressors after the Hurricane.²³ Not only did officers encounter the aftermath caused by the natural disaster, but were also challenged with the anticipated panic and chaos demonstrated among community members. Additionally, staffing during this incident was limited, work hours and work weeks were extended, food and water was scarce, and personal restraint was tested.

With Katrina being somewhat of an isolated incident drawing numerous public safety resources, think about the impact on law enforcement when multiple occurrences take place due to global warming at any given time. Granted, most tools needed to

²² <http://www.cdc.gov/MMWR>

²³ <http://www.cdc.gov/MMWR>

facilitate preparation already exist in emergency preparedness plans and operational procedures, but such plans usually target single incidents dependent upon the use of adjoining resources. If disasters such as these are on the rise (as predicted) and occurring more frequently, such current preparedness planning may become obsolete.

Since this may be the case, agencies will need to take a more proactive approach by addressing standards with their current and future employees. Agencies will need to consider adopting practices to execute higher and more demanding fitness standards when testing and hiring new employees. Additionally, annual fitness testing and medical check-ups must be implemented to help eliminate or decrease the number of avoidable injuries, health risks, and diseases to those tenured officers as a result of sustained exposure to significant events. By doing this, wouldn't it be safe to presume these fitter officers will last longer and be more effective in more challenging conditions than those who are not?

Will These "Hot Flashes" Force the Police to Become Healthier and Fitter?

As we have seen with recent disasters such as Hurricanes Katrina and Ike, and the 2008 Iowa/Midwest flooding, law enforcement personnel were maximized to their capacity both physically and mentally. Officers had undergone horrific challenges, suffered physical injury, and endured psychological strain. As we may see in the future, these disasters were just a preview of many more that may be on their way in the 21st century.

Through routine testing practices, we try to hire the most physically and mentally fit personnel we can before sending them to a police academy. In California, there are

eligibility standards set by the Commission on Police Officer Standards and Training (POST) for fitness. These standards include aerobic conditioning, muscular training, and flexibility static stretching. Once enrolled in an academy, students must take and pass the POST Work Sample Test Battery, which includes such challenges as a timed obstacle course, fence climb, and 500 yard run. Upon successful completion of these tests, the recruit has accomplished the fitness standards for POST academy graduation.²⁴ This type of preparation is necessary for today's environment, but is it enough for tomorrow?

Tomorrow's police officers need to be prepared for what the environment has in store as a result of the damage we have done to it today. If, as noted by scientists and researchers around the world, routinely tomorrow's law enforcement officers will have to work in elevated heat temperatures in places that are normally cooler and violent rainstorms in cities known for sunny weather. Police officers will be expected to endure frequent environmental challenges such as flooding along the coastal areas of California or frequent hurricanes and tornadoes in the Midwest. They may be exposed to viral diseases such as the avian bird flu and other pandemics not yet known to the medical profession. Communities will expect peace officers to possess the physical stamina to endure environmental conditions and the mental aptitude to bear uncontrollable chaos. As with most major events, predictably resources will be scarce and limited. Therefore, it is imperative agencies become more proactive to hire the most able-bodied employees. Equally as important is the need to adopt policies and practices of high fitness and health standards to maintain optimal performance. We must have a fitter workforce to work in these austere conditions.

²⁴ www.post.ca.gov

Since environmental challenges are going to occur more frequently, agencies will need to shift their way of thinking in terms of fitness ability with a more modern approach. Since some areas will experience extreme heat waves for long periods of time in some areas while excessive rainfall in others, testing processes and employee retention will need to reflect this reality. Granted, standards that exist today still need to continue; however, additional techniques need to be explored.

As an example, if someone conditioned themselves to withstand heat exposure as a result of training in an infrared sauna for at least 45 minutes a day, wouldn't they would be less susceptible to heat trauma? With anticipated excessive rainfall and flooding, shouldn't agencies test for swimming capabilities and the ability to effectively use amphibious vehicles? Shouldn't the POST Work Sample Test Battery now include the ability to hold your breath under water for long periods of time and a water obstacle course? What about considering training in a wind tunnel simulator for those foreseen windstorms? Since global warming is anticipated to bring about challenging weather changes, this battery of tests and training techniques better reflect what we need to prepare for. Additionally, to sustain excellence, agencies must enforce maintenance among their staff to ensure endurance is routinely achieved through mandated fitness testing and medical follow-up. Annual medical check-ups, inoculations, and blood donations should no longer be voluntary but now mandatory. So why haven't we thought of this before?

Prior to the passage of the American Disabilities Act (ADA), it was fairly easy for an employer to compel an employee to submit to medical and psychological examinations with relatively little justification. Following the implementation of ADA,

however, such action must be justified.²⁵ If departments were to mandate fitness standards to tenured employees who struggle with their weight and who do not regularly exercise due to their age or lifestyle, it is likely the protection under ADA would be an obstacle for departments wanting to pursue such mandates. If drastic changes continue to occur due to global warming, though, these standards must be enforced to meet the requirements of a stronger, healthier, and fitter workforce. If not, agencies will be forced to work in 21st century conditions using a 20th century mentality.

Conclusion

Years ago, if someone were to bring up the topic of global warming and the potential implications it would impose to our environment, that person would have been scrutinized. As a matter of fact, when Al Gore brought the issue to Congress back in 1989, he thought they would be startled at his findings, however, they were not at all impressed.²⁶ Today, not a day goes by where you turn on the television set, log onto the internet, or listen to the radio and the term global warming is not mentioned in one way or another.

There is scientific evidence to support the progression of global warming and its environmental and social effects, yet does anyone in the law enforcement community take it seriously? Law enforcement has demonstrated it is very well prepared to handle catastrophic emergency situations as indicated by the response of the 9-11 terrorist attack and even Hurricane Katrina. However, with consistent and routine catastrophic events

²⁵ California Peace Officer, Winter 2009, Marty Mayer

²⁶ The Inconvenient Truth, Al Gore 2006

offered as a result of global warming, is law enforcement as mentally and physically prepared as it should be?

To be better prepared, we have to think and plan differently. Agencies nationwide need to consider how to hire and retain the most capable personnel to withstand the challenges foreseen with global warming. One of the most obvious choices would be to reconsider how agencies test and keep potential candidates. Additionally, mandated fitness standards should be common practice. Granted running a timed obstacle course and bench pressing your weight are great tools for hiring employees today, but is it necessarily the best way to select tomorrow's candidates? And, just because you can perform a battery of fitness tests in an academy as a young recruit does not necessarily mean you have that same drive and stamina 20 years into your career. Why shouldn't agencies pursue stricter health and fitness practices? After all, is it really such a bad thing?