

Executive Summary

Damage from seemingly more frequent and more severe weather calamities and other natural phenomena during the decade from 1990 to 1999 lead to 460 Presidential disaster declarations. The number of disaster declarations that were issued for 1990 to 1999 was approximately double the number that was issued for 1980 to 1989 and for all preceding decades on record. An important concern during natural disasters is the potential for outbreaks of diseases in animals and humans. The animal diseases for which there is concern may be classified broadly into two categories, infectious hazards and non-infectious hazards. Examples of infectious hazards commonly discussed in the aftermath of hurricanes or other disasters resulting in flooding include the mosquito-borne diseases (e.g., eastern equine encephalomyelitis), leptospirosis, anthrax, botulism, cryptosporidiosis, giardiasis and hoof rot. Frequently discussed non-infectious hazards of animals during natural disasters include traumatic injuries, aspiration pneumonia, and toxic and sewage-related gastroenteritis. There is little rigorous scientific documentation that the incidence of animal diseases increases substantially, either during or shortly after natural disasters. The absence of such scientific documentation suggests that there could be a significant disparity between the perceptions and the realities of the incidence of animal diseases during natural disasters. Thus, a valuable service that health professionals can provide during natural disasters is communication to emergency management agencies, the news media and the public of accurate scientific information about the potential risk of infectious and non-infectious hazards to animal and human health.

The objective of this paper is to describe some of the major natural disasters that have occurred in the U. S. during recent years and to review some infectious and non-infectious hazards that, at the very least, are perceived to be related directly to natural disasters. The number and types of natural disasters, the basic ecology and epidemiology of several infectious hazards that are thought to be affected by the climatic and environmental changes during natural disasters, and the impact of natural disasters on some non-infectious hazards of animals are presented.

The U.S. experienced 186 Federally-declared, natural disasters during years 1998-2000. Thunderstorms and floods comprised slightly more than 50 percent of the total number of these natural disasters. Regarding infectious hazards, during the past 25 years there was only one natural disaster involving flooding (i.e., the Red River flood of 1975) to which significant animal morbidity and mortality due to arbovirus disease was attributed. There is minimal to no scientific evidence that links natural disasters in the U.S. to significantly consistent increases in the incidence of other infectious diseases of animals such as anthrax, leptospirosis, and cryptosporidiosis. While not documented, the destruction caused by some natural disasters might in fact destroy ecosystems that normally harbor pathogens and their vectors and consequently decrease, not increase, the risk of outbreaks of infectious disease. Regarding non-infectious hazards, sporadic incidents of morbidity and mortality due to drowning, heat waves, and traumatic injuries have been documented more clearly. Thus, the potential economic impact of non-infectious hazards arising from natural disasters may be greater than the economic impact of infectious hazards. While vigilant surveillance for outbreaks of infectious hazards during natural disasters should

not be discouraged, there should be appropriate resources allocated towards the resolution of issues related to the prevention, control and treatment of non-infectious hazards.