

Title: Eco-Terrorism and the Corresponding Legislative Efforts to Intervene and Prevent Future Attacks

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Research Question: This study reviews the extent of attacks related to eco-terrorism from 1970 to 2012 to understand the development of this relatively new phenomenon in Canada, Japan and the United States. Furthermore, we conducted legal analysis to identify important legislation related to prevention and intervention of eco-terrorism. Time series analysis was then applied to data to examine the intervention effects of legislation on subsequent attacks across the three countries.

Importance: Eco-terrorism was listed as the most serious domestic threats by the FBI in 2005 (Carson et al. 2012). For example, the Earth Liberation Front (ELF) has caused an estimated \$100 million in damage and "The Family" has committed an estimated \$48 million worth of arson and vandalism from 1996 through 2001. On the other hand, there have been several legal acts passed targeting this special type of terrorism. Given the great extent of monetary loss resulted from eco-terrorism attacks, it is important to evaluate the deterrence effects of the corresponding legislation to understand if the legal acts have achieved their intended effects.

Research Findings: We identified 1,127 eco-terrorism attacks and more than one hundred important environmental regulations as well as legal cases across the three countries in this study. From the descriptive analysis, we show that eco-terrorists are less likely to cause casualties, more likely to attack private companies and businesses, and cost greater property damage than other types of terrorist attacks. The geographic distribution of attacks shows a clear concentration of cases clustering around the coast of the U.S., among which, California and New York are clearly the "hot spots" of eco-terrorist attacks. Most attacks perpetrated in Canada were contributed by the ALF and ELF and located close to the U.S.-Canada border. In Japan, most of the attacks are related to anti-whaling campaign from outside of the country. Time series results show that AETA, the USA PATRIOT Act, and the hazardous or injurious devices on federal lands deterred subsequent attacks while AEPA actually led to an increase in the number of eco-terrorism attacks.

Implications: We argue that legislation with more comprehensive scope of protection on subject of interest could lead to successful deterrence effects on eco-terrorism. While there are many regulations or treaties to protect wildlife or animals in wilderness, however, the experimental or testing animal protection is a missing part in legal arena. In order to reduce future conflicts and potential attacks, the Congress and legislators need to think about this issue and whether it is necessary to create standards and ethical rules to protect experiment animal rights.