

The environmental, social, health and economic impacts of recreational use of all terrain vehicles (ATVs) in North America: Lessons for Europe

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Introduction

Throughout North America, the Off Highway Vehicle (OHV) lobby actively campaigns to open access to ATVs (Quads) on public and private lands whether in pristine protected areas or more developed rural communities to expand and connect their already extensive trail networks. This study reviews the relevant environmental, social, health, and economic literatures to ascertain the broad impacts of passively or actively supporting ATV access in public policy. The available evidence suggests, using Nova Scotia, Canada's ATV experience as a focus, that the costs substantially outweigh any public benefits. Furthermore, jurisdictions, including those now targeted for expansion by the ATV industry in Europe should carefully examine the North American ATV experience before granting unfettered access for ATVs to recreation and multiple-use areas. It is argued here that the public is better served by generally restricting ATV access in outdoor recreation areas rather supporting their use.

The documented evidence

Environmental impacts

There are three fundamental concerns regarding the environmental impacts of recreational ATVing. The first is landscape destruction, the second relates to vehicle emissions, and the third is noise. Experience in North America suggests that landscape damage from recreational ATVing is extensive and cannot be easily contained once ATVing gains a foothold (Wuerthner 2007). The second concern, one that has more direct health implications is ATV exhaust emissions. According to the US Environmental Protection Agency, ATVs produce from 16 to 35 times the amount of air pollution of the average family car, and the exhausts contain several carcinogens. Such high levels of exhaust plumes, particularly given the propensity of users to ride in large convoys, present a very real yet uncharted health hazard to users. The third environmental health concern is noise. Noise is a key irritant for host communities and ambient noise is recognized by the World Health Organization as a significant health hazard. While there are numerous popular media accounts of nuisance noise from ATVs, and the State of California among other jurisdictions, has measured ATV noise levels and established standards, the health hazard to host communities is yet to be systematically assessed. Be that as it may, ATVs are said to have a large auditory footprint, over a kilometer as one approaches and a similar distance as an ATV retreats.

Social impacts

The literature assessing the social impacts of ATVing is sparse. On the one hand there is an emerging literature that documents the camaraderie among recreational ATV riders (e.g. Albritton, Stein, & Thapa 2009). And on the other, a neophyte academic literature (e.g. Pitter 2009) supported by burgeoning popular press coverage points to the escalating social discord in rural communities who are forced to endure recreational ATVing either as a result of enabling public policy or as a consequence of a policy vacuum. As in the village of Paradise, Nova Scotia, communities are increasingly taking legal action against local and regional governments that fail to protect their basic rights for peaceful enjoyment of their properties that are disrupted by recreational ATV use.

Health impacts

ATVing is an extremely dangerous activity. In the United States The Centers for Disease Control and Prevention pegged the annual costs of death and trauma to the US economy at \$3.24 billion dollars (Helmkamp & Lawrence, 2007) while the combined estimates of ATVing and Snowmobiling in Canada was estimated at \$381 million (on a per capita basis this is similar to the USA). In response to the growing recognition of the health impacts of ATVing in North America, the Canadian ATV distributors council recently sponsored a study "to prove" that ATVing was a healthy active lifestyle. Its claim of health benefits have been brought into serious question, however, by Bissix and associates. (2012).

Economic impacts

A number of economic impact studies sponsored by the ATV industry and various user advocates document substantial economic activity but fail to incorporate the broad costs of ATVing to society and as a consequence, overestimate net value. To attain a realistic economic valuation of ATVing, it is important to go beyond gross expenditures to include healthcare, landscape damage, atmospheric pollution, community nuisance, and law enforcement costs. Unfortunately, no such studies have comprehensively measured this. Even without a reliable estimate of environmental and social costs, however, the health burden to society of ATVing is sufficiently large to negate the net economic value of ATV sales.

Summary and conclusions

In summary, it is clear that recreational ATVing has substantial environmental impacts as well as social, health and

economic costs that present a huge burden on the general public. While it is also clear, given the substantial adoption of ATVing as a recreational activity in North America that this activity is very popular--there are over 10 million ATVs in use in the USA alone--there is increasing evidence that their enjoyment is at public expense in terms of environmental damage, social upheaval and health burden costs. While this literature review provides a basis for assessment, the generation and analysis of purposeful data would allow for an increasingly more precise calculation of the social and

economic impact of ATVing. Although this study focuses on the North American experience, land-use and health promotion and protection policy makers in Europe, who have yet to feel the full force of aggressive ATV marketing, should heed this review as a warning in order to respond effectively when early adoption of ATVing moves to mass adoption in their jurisdictions.

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