

Tourism¹

Impacts

*Alexandria, VA (November 28, 2011) – On the heels of Hurricane Irene the Global Business Travel Association has quantified the impact of major weather events on business travel. The research uses GBTA’s Business Travel Quarterly methodology to determine how a theoretical Category-3 hurricane on the East Coast would impact the business travel industry. The eleven East Coast states in the path of the scenario storm suffered an average business travel spending loss of \$58 million per day. Business travel is a major driving force in the economy and disruptions in business travel will have wide-ranging repercussions. In this situation, business travel would initially lose about 514,000 trips and \$606 million in spending due to storm related cancellations. This report also predicts that interrupted Business trips would result in a total GDP loss of about \$675 million Lost federal, state and local tax revenues of \$176 million.*²

According to the North Carolina Department of Commerce’s Tourism Division, the state ranks as the 6th most visited in the United States making the tourism industry one of the state’s leading economic drivers. The Division reports that both leisure and business visitors traveling to and within the state spent a record \$17 billion in 2010, supporting more than 40,000 North Carolina businesses and directly supporting 183,900 jobs across the state. State and local tax revenues generated by visitor expenditures total more than \$1.5 billion annually.³ While a most successful industry for the state, it is also an industry that is highly sensitive on both the supply and demand sides to climate and changes in climate. Dr. Daniel Scott, Past Chairperson, WMO Commission on Climate and Tourism has noted regarding the effects of climate on the attractiveness of tourism destinations, “Weather can ruin a holiday; but climate can ruin a destination.”⁴

North Carolina’s tourism industry is complex and multifaceted. It includes a variety of operating sectors such as transportation, accommodations, food service, attractions, entertainment, events, travel trade, tourism services and adventure and outdoor recreation, each facing its own unique and distinct impacts regarding the effects of climate and a changing climate. For coastal tourism, sea level rise poses a direct threat. The impacts will be felt through erosion, habitat loss, saltwater intrusion, changing insurance costs and property values, transportation infrastructure and the resulting coastal recreation and tourism choices, but will play out based on a case by case basis driven by distinctive local factors and individual events such as storm severity.⁵

¹ This information was prepared for the 2011 North Carolina state report on climate for inclusion in the National Climate Assessment Report. Contributing to this report are Mr. Alex Naar, Drs. Patrick Long and Scott Curtis, and Heather Blair, Graduate Student. All are affiliated with the Center for Sustainable Tourism, East Carolina University.

² Weather Disaster + Business Travel: Dangerous, Disruptive and Costly: GBTA Research Models Category-3 Hurricane Hitting U.S. East Coast. Accessed on December 2, 2011 at: <http://www.gbta.org/foundation/pressreleases/Pages/rls112811.aspx>

³ Curtis, S., Arrigo, J., Long, P. and Covington, R. (2010). Climate, Weather and Tourism: Bridging Science and Practice. Publication of the Center for Sustainable Tourism, Division of Research and Graduate Studies, East Carolina University, Greenville, NC.

⁴ Curtis, S. et al. (2009). *Climate, Weather and Tourism: Bridging Science and Practice*

⁵ Curtis, S., Long P. & Arrigo, J. (2011) Climate, Weather, and Tourism: Issues and Opportunities. *Bulletin of the American Meteorological Society*, March, pp 361-363.

Another recurring theme of vulnerability across a wide variety of tourism businesses is drought. For the golf industry, estimated to have \$5.3 billion impact on the state's economy in 2007⁶, increased drought puts pressure on water use, use of fertilizers and course management. For the restaurant sector, such fundamental actions as installing water saving spray heads in dishwashers and the practice of serving water to patrons only upon request, will only be expanded to other water saving techniques in such situations. For the ski industry, which was estimated to have \$146 million impact in the 2009-10 season⁷, climate will define those operators who ultimately stay in business due to shorter winter seasons and higher elevations of warming. It has been noted by Francesco Frangialli, UN World Tourism Organization Secretary-General, that "Climate change will constitute an increasing risk for tourism operators in many destinations. With many tourism activities heavily dependent on the climate and with insurance policies increasingly affected by natural hazards, accurate weather information and forecasting of extreme climatic events are becoming ever more important for tourism businesses"⁸.

For tourism destinations, the impact of climate change is complex but direct and generally there are two effects: 1) making a destination more or less attractive, and 2) making the origin of departure more or less attractive. But not all destinations and industry sectors will feel or access the impacts of climate equally or within the same time line. For example, a focus group conducted in fall of 2011 with tourism related business operators by East Carolina University in Beaufort, North Carolina, revealed that current tourism business owners felt their weather conditions today, although different than in the past, are still ideal for a tourism-dependent coastal environment. Regarding the future, these tourism business owners felt weather and climate do not appear to be changing dramatically although increased storm surges are being observed and the wind seems to blow more now than before. There has also been an observable increase in jellyfish, fewer hurricanes, and more erosion and deposition on nearby shoals and banks. Participants concurred that climatology trends might be better to use in making business decisions than weather forecasts.⁹

It is also important to consider how climate change will impact industries that support a tourism economy. One very substantive area of the built environment that is highly susceptible to climate change and its resulting effects across North Carolina is that of vacation or second homes. Second home properties are most often found in coastal and mountain environments which are highly desirable places to live and to vacation due to their natural beauty and recreation amenities.¹⁰ The 2010 U.S. Census Data for General Housing Characteristics reports a total of 1,447,152 housing units in the "Seasonal, Recreational or Occasional Use" category across the

⁶ SRI International (2009). *The North Carolina Golf Economy Summary Report*. North Carolina Alliance for Golf

⁷ RRC Associates, Inc (2010) North Carolina Ski Areas Association Economic Value Analysis Final Results. North Carolina Ski Areas Association.

⁸ Scott, D. and Lemieux, C. (2009) *Weather and Climate Information for Tourism*. Commissioned White Paper for the World Climate Conference 3. World Meteorological Organization: Geneva and United Nations World Tourism Organization: Madrid. P. 10.

⁹ Perceptions of Climate and Weather on Tourism Businesses in Beaufort, North Carolina. Internal report, Center for Sustainable Tourism, East Carolina University.

¹⁰ Long, P., Ireland, M., Alderman, D. and Hao, H. (In Press) Rural Tourism and Second Home Development. In M. Uysal et al. (eds.), *Handbook of Tourism and Quality-of-Life Research: Enhancing the Lives of Tourists and Residents of Host Communities*, International Handbooks of Quality-of-Life, DOI 10.1007/978-94-007-2288-0_35, © Springer Science+Business Media B.V.

11 state SE Climate Region which represents 4.04% of the total housing stock in this region, but importantly, represents substantial vacation expenditures.¹¹ The same data reported that for North Carolina there were 191,908 such units or 4.43% of the state's housing stock.

Second home tourism-related economies are structured to support the tourist orientation and demand, particularly as they relate to 1) **construction and services**, where homes have been built to meet the needs of the ever-growing visitor population and businesses have developed to provide the maintenance and upkeep services needed by second home property owners; 2) **retail trade**, from souvenir and clothing shops to grocery stores; 3) **real estate**, rental and leasing, including the sale of second homes and rental of beach and vacation houses; and, 4) **leisure and hospitality services**, to meet the recreation, accommodations, and food service needs of second home property owners.¹²

A recent study funded by the NC Sea Grant Program and conducted through the Center for Sustainable Tourism on second home and full-time resident home owners in Currituck County, North Carolina, found there were statistically significant differences in attitudes towards climate and tourism among three clusters of respondents based upon their residential status, education level, and perceptions on importance of sustainable actions factor. People who perceived that climate and weather affect both their current property ownership and future property values have a comparatively high level of education and feel sustainable actions are relatively important to the success of the tourism economy. Property owners who perceived climate and weather does not affect their current property ownership but still affect their future property values are the most educated among three clusters, and also perceived sustainable actions to be very important to the success of the future tourism economy in Currituck County. Respondents who perceived climate and weather neither affects their current property ownership nor their future property values have the lowest level of education and did not feel sustainable actions are as important as the other two groups did.

Such information is helpful for decision-making entities in Currituck County to recognize their vulnerabilities to the future impacts of climate change, more effectively manage their current property ownership practices, and develop adaptation strategies as necessary, particularly as it relates to second home ownership.

Risks & Vulnerabilities

Risks and vulnerabilities to tourism are moderate to high as indicated in the impacts section. The above impacts of climate change are likely to be realized to varying degrees in the tourism industry of North Carolina. For example coastal tourism has a very risk. The magnitude of these effects relative to other impacts is as yet unknown.

¹¹ General Housing Characteristics, Seasonal, Recreational or Occasional Use category. Compiled from 2010 Census Bureau data, October 12, 2011.

¹² Long, P. and Hao, H. (2009). Tourism Impacts and Second Home Development in Dare County: .A Sustainable Approach. Research report prepared for the Division of Research and Graduate Studies, East Carolina University and the residents of Dare County. Center for Sustainable Tourism, East Carolina University. P.3.

Current Efforts

There are currently no existing efforts statewide to mitigate or adapt to the impacts of climate change within the tourism industry. There are however a number of examples of individual businesses and destinations that are taking actions. Examples of such were presented during the “Tourism Business Owners and Operators Reactor Panel” at the Climate, Weather, and Tourism Workshop: Issues and Opportunities at East Carolina University.¹⁴

Strategies

There is a growing consensus that the application of Geographic Information System technologies holds a key to effectively combining the various economic and weather data sets on behalf of tourism businesses and destinations. Some climate sensitive tourism activities already have GIS-based informational resources housed on the internet.¹⁵

From the perspective of future success of tourism in North Carolina, it is also important that tourism businesses and destination communities have access to short and long-term weather and climate data in a form that is easy to interpret. It is equally important that emerging examples and case studies be documented and shared. Researchers report that climate data is useful for consumers in determining the destination, timing of travel, and activity of choice.

Regarding climate and tourism generally there is much research yet to be done to address such pertinent questions as:

1. What are the appropriate immediate and long term planning strategies to empower tourism businesses to proactively manage the weather and climate-related aspects of their respective tourism sector when facing risks due to predictable changes in climate and weather variability?
2. Are businesses that use climate and weather data more prepared for extreme weather conditions and better able to respond to risks due to hazard events than those who do not take advantage of climate and weather information?
3. Do discrete sectors of the tourism industry, whether located in a coastal or mountain environment, have different needs for information on climate and weather? What are the differences for each tourism operator? How can this information be made readily and easily accessible for each specific tourism sector?
4. Is the availability of climate and weather information as well as the application of a climate index helpful for coastal tourism businesses in terms of increasing their marketability and staying competitive?

¹⁴ Climate, Weather, and Tourism Workshop: Issues and Opportunities Summary Report. Accessed at <http://www.research2.ecu.edu/Tourism/Documents/Summary%20Report.pdf>

¹⁵ Curtis, S., Arrigo, J., Long, P. and Covington, R. (2010). Climate, Weather and Tourism: Bridging Science and Practice. Publication of the Center for Sustainable Tourism, Division of Research and Graduate Studies, East Carolina University, Greenville, NC.