YEAR 2000 RPI DELIVERABLES

External Research

1) The Proxy Research Group provided estimates of hurricane landfall probabilities for the Boston/Providence area, using independent proxy techniques to cross-correlate results. Landfall probabilities were estimated via analyses of lake-sediment cores and salt marsh cores.

2) The Proxy Research Group funded an additional $60,000 of external research (T. Webb, Brown University; K.-B. Liu, Louisiana State University) to develop return-period estimates near the western end of Long Island and the Florida-Georgia border. The results of this work will be available in Spring, 2001.

3) The Forecast Research group provided initial results for their reanalysis of U.S. landfalling major hurricanes, final results for the effects of ENSO on Northern Hemisphere tropical cyclone activity, and initial results on the influence of the NAO on major hurricane activity. The group also developed a model that examines conditional wind-speed probabilities for landfalling hurricanes.

4) The Forecast Research group provided $57,000 for the continued funding of Jim Elsner (Florida State University) towards the development of a new space-time model of hurricane activity, and new funding for Johnny Chan (City University of Hong Kong) for the development of a typhoon landfall forecast in China.

5) The Weather Research Group provided $112,000 for external research to identify urbanization signals in temperature records (E. Kalnay, University of Maryland; A. DeGaetano, Cornell University; A. Barnston, NCEP/NOAA).

Workshops

6) RPI hosted three workshops during 2000. The first provided an update on RPI-funded research, the second examined the impact of extreme European wind storms and floods on the insurance industry, and the third workshop explored the climatology, dynamics, and forecasting of tornadoes and hail (we are currently working to put this workshop on the web). For each workshop, we have produced a CD-ROM that provides electronic access to the speakers' slides and a digital video of each speaker's presentation.

Internal Deliverables

7) Introduced the RPI Science Review. This periodic e-mail feature is designed to help you keep up-to-date on science news related to your business.

8) Inaugurated the "ENSO Tracker", a one-stop web page that allows you to monitor the current ENSO state, access the latest ENSO forecasts, and visualize the "teleconnections" between ENSO and such insurance-relevant phenomena as global

tropical cyclone activity, US tornado activity, and North American temperature and precipitation patterns. The site also features a brief ENSO primer and selected links to other web-based ENSO resources, including research papers and raw atmospheric and oceanographic data sets.

9) Released the "NAO Tracker", a one-stop web page that allows you to monitor the latest available North Atlantic Oscillation (NAO) data, provides a brief primer on the NAO, and provides links to other web-based NAO resources such as research papers and data sets. The site also allows you to visualize the links between the NAO and such insurance-relevant phenomena as global tropical cyclone activity and European temperature, precipitation, and wind patterns.

10) Assessed the seasonal Atlantic Basin hurricane forecasts issued by Bill Gray, Mark Saunders (TSUNAMI), and Jim Elsner. These assessments compare the forecasts and explain why it remains difficult to rigorously assess their skill.

11) Developed a "One-Stop Web Shop" for tropical cyclone information that provides real-time forecasts and imagery of current tropical cyclones in the Atlantic, NE Pacific, and NW Pacific basins.

12). Unveiled a new earthquake web page that provides easy access to the latest in seismic research and monitoring via a single clearinghouse on the password-protected side of the RPI web site. From this page you can also sign up for the RPI's earthquake notification e-mail list.

13) Released version 1.0 of the RPI Tropical Cyclone Wind Probability Model, or WindProb. WindProb allows users to calculate and plot the cumulative frequency and probability of winds exceeding a given wind speed at coastal locations in the eastern U.S., the Caribbean, Australia, or the northwest Pacific. The model also generates maps that show the probability of hurricanes with winds above a user-specified threshold making landfall during a specified time period for each point along a coastline. The model can also provide conditional probability estimates based on different phases of the El Niño Southern Oscillation (ENSO) and the North Atlantic Oscillation (NAO).

14) Issued a forecast for the probability of intense-hurricane landfall along the U.S. coastline during the 2000 Atlantic hurricane season based on the state of the North Atlantic Oscillation during the 1999-2000 winter.

15) Developed a CLImatology-PERsistance (CLIPER) risk model to provide loss-estimates for the landfall of hurricanes in the United States. We provided an estimate of the insured loss for Tropical Storm Gordon making landfall in the Florida panhandle.

Current RPI Sponsorship

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