What is ThreadEx?

ThreadEx is a project to reconstruct fragmented data sets that result from weather station relocation over the instrumented period of record for a given locality. Multi-location combined (or threaded) data sets have been created for approximately 270 stations published in NOAA National Climatic Data Center's (NCDC's) Local Climatological Data, for the purpose of calculating daily extremes of temperature and precipitation for the longest period available.

Why ThreadEx?

Daily records of both temperature and precipitation are of great interest to the public and data users, and they are beneficial in climate perspectives. Over years of observation, some National Weather Service/Weather Bureau stations are relocated. As a result, obtaining long time series (i.e., one hundred years or more) for computation of extremes is difficult, unless records from the various locations are "threaded" or put together. In the past, inconsistent approaches have resulted in disparate reporting of record and extreme values at many prominent large metropolitan observing sites leading to confusion among data users and the general public about what constitutes an official daily extreme record. To address these problems, the ThreadEx project developed a methodology for establishing multi-location combined (or threaded) station data.

How to access ThreadEx data?

ThreadEx data are located on the web at:
http://threadex.rcc-acis.org/

Start by selecting one of the first-order U.S. weather stations, which are sorted alphabetically by state. Then select the desired variable and click "submit." The top three daily records for the chosen variable (highest maximum temperatures, lowest maximum temperatures, highest minimum temperatures, lowest minimum temperatures or highest total precipitation) will appear. Tie values are flagged, with the most recent occurrence presented first. The full data set is available under the "Revision History" link on the ThreadEx home page. Daily data for the period of record for ThreadEx stations are available for viewing and further analysis in xmACIS.

How were ThreadEx data developed?

The Northeast Regional Climate Center (NRCC), in consultation with NOAA's National Climatic Data Center (NCDC) and the National Weather Service (NWS), evaluated station relocations and built "threads" using NOAA daily data sets.

The record of a currently active station was used as the starting point for a station thread. This station's current record was used as far back in time as possible, taking precedence over a closed station's record during any periods of overlap. A search was conducted to identify other weather stations in the area that could be used to extend the thread further back in time. In this process, preference was given to Weather Service/Bureau stations (that were not themselves LCD stations). The thread was extended back in time as far as possible using NOAA daily data available in digital form. Partner input was solicited and this local expertise was used to fine-tune the station threads.

The data sets used for this project included NCDC DSI3210, DSI3200, DSI3206 and DSI3205. In addition, NRCC was able to extend over seventy station threads back further in time using daily data contributed by local NWS offices, state climate offices and regional climate centers.

For each ThreadEx record listing, at the bottom of the web page, there is a link to the data coverage for the threaded record and the stations that comprise the threaded record can be viewed.

Who is responsible for ThreadEx?

ThreadEx was developed and is maintained by NOAA's Northeast Regional Climate Center, Dr. Art DeGeatano, Director.

Where to find more information:

If you have any questions, contact Tim Owen at NCDC (Tim.Owen@noaa.gov) or Keith Eggleston at NRCC (KLE1@cornell.edu).