

DESCRIPTION OF SONIFIED DAILY WEATHER RECORDS FROM LINCOLN NEBRASKA

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The following sound files display audio representations of daily temperature (high and low) and precipitation events from Lincoln, Nebraska for selected monthly periods. Two of these months are samples from summer months (July, 1936 and July, 1993), and four are from winter months (December, 1999, December, 2000, February, 2000, and February 2001). These have been selected to illustrate the range of year to year variation in climate typical of modern climatic history in the Great Plains region of the United States, and how sound can reveal those contrasts. High and low temperatures for each day are represented by synthetic strings, rainfall by descending piano note sequences, and snowfall by ascending dulcimer sequences (see text of Flowers, Whitwer, Grafel & Kotan, 2001, for details of the auditory format).

1. JULY 1936

July of 1936 was very hot and dry “dust bowl” month in Lincoln, Nebraska. The historical high temperature record of 115F was observed on July 25, and only 0.08 inches of rain fell during the month. Rain only occurred on three days.



2. JULY 1993

In sharp contrast to 1936, the summer of 1993 was extremely wet (with flooding in many areas of the central US) and relatively cool. In Lincoln, rain fell on 20 days of the month, with two quite heavy falls (2.77 and 3.07 inches) on successive days on the 23rd and 24th. These are heard as wide range descending piano sequences (ending in uniquely low pitches and loud intensities) toward the end of the audio sample.



Optimization of duration and speed of auditory displays of complex multivariate data is an issue under investigation in our laboratory. We have included this file (which is based on the same data as the previous file) to illustrate the perceptual effects of doubling presentation rate. While loss of detail can result in a compact display, shorter displays may prove more useful as earcons in tasks such as auditory browsing for selecting data sets with key properties.



3. DECEMBER 1999

The winter of 1999-2000 was atypically dry and warm in Nebraska. Only 3.8 inches of snow fell, and temperatures exceeded 60F on several days, even late in the month.



4. DECEMBER 2000

What a difference a year can make! Sustained cold temperatures, and 15.4 inches of snow, including a 6 inch and 4 inch fall. Note the large proportion of days on which at least some snow fell.



5. FEBRUARY 2000

February of 2000 continued our warm dry winter period. With the exception of the single 7 inch snowfall on the 18th, the month was characterized by unusually mild (even warm) temperatures (several days of record high minimum temperatures above 40F, and several days approaching or exceeding 70F).



6. FEBRUARY 2001

Again, we have a sharp contrast in successive years – a continuation of the much colder winter for 2000-2001. This file is also unique for a day (February 24) on which both substantial rainfall (.75”) and snowfall (1”) occurred.



7. YEAR 2000

The following audio file, yr2000, is a “climate symphony” summarizing the daily temperature and precipitation events for the calendar year 2000 in Lincoln, Nebraska, USA. It is a conjoining of monthly audio data records from January through December, and is about 2:42 in duration. This file illustrates both the seasonal climate variations, and the contrast between relatively dry and mild winter of early 2000 into a much cooler and somewhat wetter late fall and winter. It definitely ends with a cold and snowy period.

