



Western Marsh Wren
CALIFORNIA

Bob Steele/VIREO

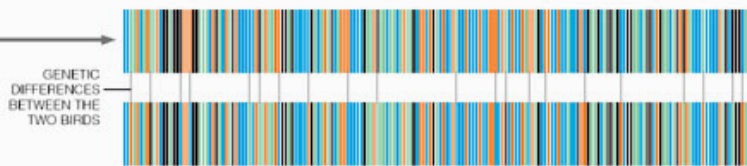


Eastern Marsh Wren
NEW JERSEY

Steve Green/VIREO

Looks That Deceive

Existing methods of identifying species are time-consuming and imperfect. Two varieties of marsh wren, above, may turn out to be different species after analyzing bits of DNA from a common gene.



GENETIC DIFFERENCES BETWEEN THE TWO BIRDS

The comparable gene segments can be expressed as bar codes, above.

Section of 650 pairs analyzed, out of about 1.2 billion in each bird's genome.

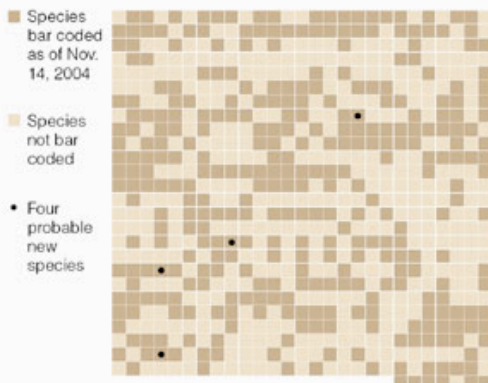
COLOR KEY

The four bases, which encode the information in a DNA molecule:

- GUANINE ■ ADENINE
- CYTOSINE ■ THYMINE

KNOWN SPECIES OF NORTH AMERICAN BIRDS

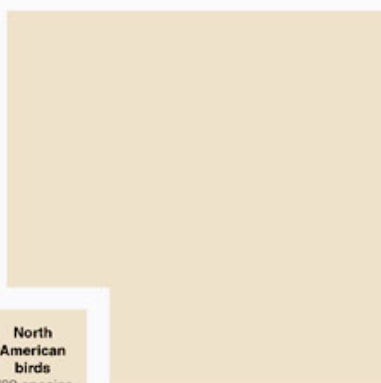
Of 709 identified, each represented by a square below, 341 have been bar coded. Four were discovered in the process.



Sources: Dr. Mark Stoeckle, Rockefeller U.; Dr. Paul D. N. Hebert, U. of Guelph

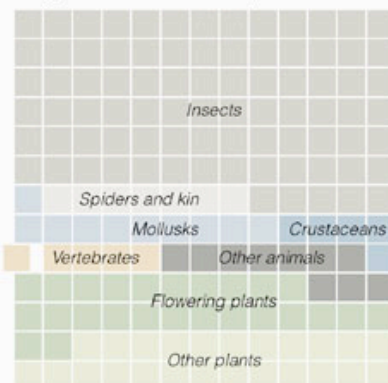
KNOWN WORLD BIRDS

Approx. 10,000 named species



KNOWN ANIMALS AND PLANTS

1.7 million species; total biodiversity is thought to be about 10 million species.



The New York Times