

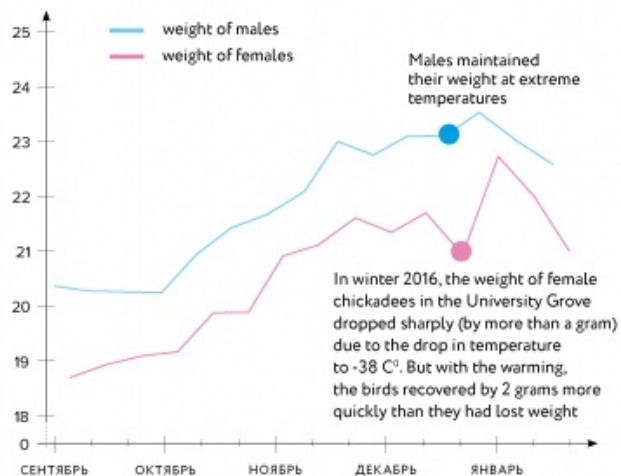
Chickadees lose weight in the summer

March 6 2017



Chickadees also lose weight in the summer

How chickadees' weight depends on the length of daylight



TSU ornithologists were able to identify several patterns of weight change in the birds for the last autumn-winter period:

During the period of shorter daylight hours, the birds increasingly gain weight, that is, they get fat in winter.

Males have a more stable weight gain, and the mass of females depends on the specific temperature changes.

Males survive more easily in winter because of their higher initial weight.



+3
grams
chickadees' average weight gain in the winter period

26,8
grams
the maximum weight of a male recorded on December 14, 2016
AVERAGE WEIGHT
23,5 GRAMS

25,8
grams
the maximum weight of a female recorded on January 8, 2017
AVERAGE WEIGHT
22,8 GRAMS

Credit: Tomsk State University

In 2016, TSU scientists studied almost 3000 birds of 67 species in the Tomsk region. At the same time, 300 big titmice (chickadees) in the university grove received individual colored labels. The intensive bird banding allowed the researchers to evaluate aspects of their lives in the autumn-winter period. For example, the scientists found that there are more females in the city than in the surrounding villages, and that the weight of titmice is associated with the length of daylight.

"Due to the individual rings and colored tags—'colored passports'—we collect the facts about the relationship of the titmice with their territory of nesting and wintering, life expectancy, and the age structure of the species," says ornithologist Sergey Gashkov, an employee of the Zoological Museum of Tomsk State University. "This year, for example, we were able to determine two long-living ones. They have overwintered in the university grove and the Siberian Botanical Garden seven times."

In addition to the migration of birds, scientists evaluated their size, [weight](#), fat stores, and psycho-emotional and other characteristics. For example, it turned out that the mass of titmouse fat reserves increases from September until December on average by three grams (up to 23 grams for males and 22 for females), and they begin to lose weight in January.

"After the solstice (the winter solstice is the shortest day of the year, with the longest night, in the corresponding hemisphere) the titmice sense that the nights are becoming shorter, and thus, they need less fat stores for night heating," said Sergey Gashkov. "That is why titmice

reduce the intensity of their visits to feeders during the second half of the winter, as was noted by those who feed the birds. In addition, it was found that the December chill to -30C led to a temporary reduction in weight only for females, but males did not even respond to it."

Provided by Tomsk State University

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