

Mountain birds beat the odds

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Mountain chickadees (*Poecile gambeli*), a North American bird in the tit family, store away food for later occasions. These birds are found at different elevations where varying winter conditions are experienced. Previous research showed that mountain chickadees living at harsher high elevations have bigger hippocampi, the part of the brain which plays an important role in memory and spatial navigation. These chickadees also have far superior spatial memory. This helps them to be better at remembering where they hid food away.

Animals living in challenging or [unpredictable environments](#) such as deserts or snowy mountain peaks are generally thought to have enhanced mental abilities. These include being better able to solve problems and not shying away from inspecting new things. To understand if this is also true for mountain chickadees, Kozlovsky and his colleagues caught 24 young birds in the Sagehen Experimental Forest in California that had not yet experienced a winter. Twelve birds were caught at a site around 1,800 meters above sea level, while another dozen were captured 600 meters higher. Studies to test the birds' problem-solving skills and their reaction to new objects were then conducted at the University of Nevada.

The researchers first watched what happened when members of the two groups were confronted with a clear test tube with a waxworm inside. The tube was plugged with cotton. Members of the higher elevation group were able to work out how to remove the plug much more quickly than their counterparts from the lower region.

The researchers also tested if the birds would readily investigate and feed from a feeder that looked very different from the one that they were used to. None of the [birds](#) in either altitude groups were inclined to do so. In fact, they all displayed similar degrees of neophobia, almost fearfully steering clear of the unknown object. They did so even though the new feeder was baited with waxworms, one of their favorite meals. According to Kozlovsky and his colleagues, this shows that problem solving and the ability to innovate and try new things do not necessarily go hand in hand in mountain [chickadees](#).

"Enhanced problem-solving ability might be associated with living in harsher environments either via natural selection or by the animal's adaptability to different environments," Kozlovsky hypothesizes. "However, differences in problem-solving ability are not necessarily associated with differences in neophobia."

More information: *Behavioral Ecology and Sociobiology*. [DOI: 10.1007/s00265-015-1874-4](#)

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