

## **Surviving the Winter in Asahikawa**

Winters are long and harsh in the Asahikawa region of central Hokkaido, with heavy snowfalls and temperatures as low as  $-20$  degrees Celsius.

Despite these conditions, many animal and plant species are adapted to survive, each with differing mechanisms and tactics.

Coniferous trees such as pine and fir have thin, needle-shaped leaves that reduce transpiration, helping them avoid losing heat and water even in cold weather. Deciduous trees native to the region include Thurber's magnolia, Japanese oak, painted maple, and Japanese walnut. They endure the cold by going dormant, shedding their leaves, and withdrawing water from their branches. This prevents water loss, conserves nutrients, and protects the buds remaining on the twigs from frost damage. Scales and furry outer casings further insulate the buds against the cold.

Some animals, such as the Yezo sika deer, rely on the bark, twigs, and buds

of deciduous trees for sustenance through winter. The Ezo mountain hare also forages for twigs, camouflaged in the snow with its white winter fur.

While some species remain active through winter, others hibernate in warm dens. The Ezo chipmunk digs its den in the forest, curling up for winter on a bed of acorns and wrapping itself in fallen leaves. It fills the entrance tunnel with earth from its digging for protection from predators. While in hibernation, its metabolic rate lowers, and its body temperature lowers from around 37 to 8 degrees Celsius. Its breathing slows to one breath every twenty seconds.