and between breeding seasons, during which time members of a partnership might migrate to overwinter in different parts of the world. The rates of divorce varied, the authors noted, with some species such as silver gulls (*Chroicocephalus novaehollandiae*) seeming to switch mates relatively rarely, while more than a third of pairs in other species, such as Caspian terns (*Hydroprogne caspia*), divorced between one breeding season and the next.²

In the decades since then, says Culina, scientists have come to appreciate divorce as an almost universal trait of monogamous species. A famous table published in “Mate Fidelity and Divorce in Monogamous Birds,” the concluding chapter of a 1996 book edited by ornithologist Jeffrey Black entitled *Partner-ship in Birds: The Study of Monogamy*, revealed a huge range in divorce rates. Among the loyal geese and swans, about 5 percent of pairs split up between seasons, while among passerines such as Eurasian blue tits (*Cyanistes caeruleus*), nearly 50 percent of pairs split per year on average. Across socially monogamous animals, in fact, “you have from zero to a hundred percent divorce rates, but most species are somewhere in between,” Culina says. “It really depends on the life history of the species.”

Several factors correlate with average divorce rates in animal species. One is lifespan: longer-lived species tend to have lower divorce rates, perhaps because they benefit more from built-up familiarity over multiple rounds of producing and rearing off-

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**A SAMPLING OF MONOGAMOUS VERTEBRATES**

Not many animals maintain monogamous relationships, and almost all studied examples of monogamy are in birds. Below are some examples of species that do form socially and/or genetically monogamous pairs.

**Bony fish**

Most fish species are promiscuous, but some, such as seahorses (genus *Hippocampus*), are genetically and socially monogamous, with pairs mating and sharing parental care for most or all of their lifetimes.

**Amphibians**

Monogamy was thought to be absent from the amphibian clade, but in 2010 researchers published evidence of social and genetic monogamy in a Peruvian poison dart frog (*Ranitomeya imitator*).

**Cartilaginous fish**

Although little is known about mating systems in sharks and other cartilaginous fishes, there is evidence that some species such as tiger sharks (*Galeocerdo cuvier*) could be genetically monogamous.

**Reptiles**

Few reptiles are monogamous, but one exception is the Australian shingleback lizard (*Tiliqua rugosa*), which forms social relationships for 20 years or more—although around one-fifth of individuals have extra-pair relationships too.

**Birds**

Social monogamy is found in around 80–90 percent of bird species, although extra-pair mating is common. Albatrosses (family *Diomedeidae*) famously form strong social bonds that can last for decades.

**Mammals**

Fewer than 1 in 10 mammalian species practice some sort of monogamy. The socially monogamous prairie vole (*Microtus ochrogaster*), which forms close bonds and even shows anxiety-like behaviors when separated from a partner, has become a well-studied model organism in research on monogamy, though they often mate with individuals other than their partner.

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