Globally, biodiversity is in decline, driven foremost by the intensification in land management and the transformation of natural areas for agriculture, forestry, and settlements. Urban areas have doubled since 1992 and, in comparison with 2020, are projected to expand between 30% and 180% until 2100, depending on the scenario applied. Notably, urban growth often concentrates in regions of high biodiversity and affects ecosystems far beyond urban areas, such as through resource demands or climate impacts. Still, urban areas have the potential to contribute to halting global biodiversity loss. On the one hand, they do host many species, amongst them rare and threatened ones; on the other hand, apart from vascular plants, most taxa lose diversity along rural-to-urban gradients. Biodiversity conservation in urban areas needs to be shaped in ways that support global conservation efforts – and research needs to identify how this can best be done. In this talk, based on work in an international research consortium, I will provide an overview on the state of knowledge in urban biodiversity research. I will report patterns of species loss, gain, and adaptation to urban land use, point out key gaps in our knowledge of drivers and processes shaping urban biodiversity, and highlight recommendations for biodiversity-friendly urban design.