

Uri Roll - Curriculum Vitae

Address (Work): Mitrani Department of Desert Ecology, The Swiss Institute for Dryland Environmental & Energy Research, The Jacob Blaustein Institutes for Desert Research, Sde-Boker Campus of the Ben-Gurion University, Midreshet Ben-Gurion, 8499000.

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Academic profiles

Google Scholar: https://scholar.google.com/citations?user=BeQYD_IAAAJ&hl=en

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Education:

1997 - 2000 B.Sc., Faculty of Life Sciences, Tel Aviv University.

2001 - 2004 M.Sc., Ecology and Environmental Quality, Tel Aviv University.

2008 - 2012 Ph.D., Biomathematics Unit, Tel Aviv University

Academic positions

2012 - 2016 Post-Doc Researcher & Rothschild Yad Hanadiv Fellow, School of Geography & the Environment & Department of Zoology, University of Oxford.

2016 - 2018 Kreitman & Shamir Post-Doc Fellow, Mitrani Department of Desert Ecology, Ben-Gurion University.

2018 - 2022 Senior Lecturer, Mitrani Department of Desert Ecology, Ben-Gurion University.

2022 - Associate Professor, Mitrani Department of Desert Ecology, Ben-Gurion University.

Teaching experience:

2018 - Conservation biology: philosophy and ethics; graduate level; Ben-Gurion University.

2021 - Faunistics of land-vertebrates; under-graduate level; Ben-Gurion University.

2021 - Macroecology; graduate level; Ben-Gurion University.

2022 - Science communication; graduate level; Ben-Gurion University.

Selected fellowships and awards:

2009 - 2013 Adams fellowship for Ph.D. Students, Israel Academy of Sciences and Humanities.

2012 - 2013 Rothschild Fellowship for Post-doctoral studies, Yad Hanadiv.

2017 - 2019 Shamir Fellowship for returning Israeli scientists, Israeli Ministry of Science and Technology.

2020 - D. E. Koshland Jr. Family Career Development Chair in Desert Studies

2021 Toronto Prize for excellent early career researchers

Research Grants

- 2019 - 2023 Israel Science Foundation (ISF) “Elucidating drivers of global tetrapod rarity, endemism, and threat” (\$320,000)
- 2020 - 2021 German-Israeli Foundation for Scientific Research and Development (GIF-Young), Roll U. “Stamp of approval – elucidating patterns and drivers of human-nature interactions using postage stamps” (\$22,000).
- 2020 - 2021 Batsheva de Rothschild seminar. “Reptiles in space and time - using prehistoric & historic knowledge to gauge current and future global trends of reptilian diversity and conservation” (\$40,000).
- 2021 - 2023 Jewish National Fund (JNF), “Using citizen science to monitor birds in JNF areas and prioritize conservation” (\$90,000).
- 2021-2022 On the Edge Conservation. “Using Culturomics to evaluate Aichi Target 1 and reflect on future CBD targets” (\$42,600).
- 2021-2023 The Daniel E. Koshland Fund to Support Interdisciplinary Research “Socio-economic drivers and ecological impacts of urban transformation on dryland agricultural expansion across scales” (\$40,000).
- 2021-2023 Minerva-Gentner symposium “Social big data in environmental and sustainability research: from promise to practice” (33,300 USD).
- 2021-2022 Yad Hanadiv, “Eradication measures for the invasive Indian myna from protected areas” (\$20,000).
- 2022-2024 Jewish National Fund (JNF) “Conservation of the critically endangered Hula painted frog in the JNF regions of the Hula Valley (\$95,000).
- 2022 Israel Science Foundation research workshop “Elucidating drivers of global tetrapod rarity, endemism and threat” (\$22,000).
- 2022-2026 United States-Israel Binational Science Foundation (BSF) “Past, present, and future of tetrapod biodiversity dimensions” (\$244,000).
- 2023-2025 Israeli Ministry of Science and Technology (MOST) “Systematic conservation planning for Israel” (\$145,000).

Service and committee membership

- 2018 - SCB conservation behavior working group member at large.
- 2018 - SCB conservation culturomics working group, co-founder and member at large.
- 2018 - President of the Israeli Chapter of the Society for Conservation Biology.
- 2019 - Scientific Committee of the International Panel on Behavior Change (IPBC).
- 2019 - Non-Resident Researcher of the Interuniversity Institute for Marine Science in Eilat (IUI).
- 2019 - Member of the Israel National Red List of Invertebrates Scientific Committee.
- 2020 - Member of the Data Science Research Center, Ben-Gurion University .
- 2020 - Member of the BGU computational research resources committee.
- 2021 - Member of the BGU School of Sustainability and Climate Change.

Articles accepted for publication in peer-reviewed journals:

- Roll U., Dayan T. and Kronfeld-Schor N. 2006. On the role of phylogeny in determining activity patterns of rodents. *Evolutionary Ecology* 20: 479-490.

- Roll U.**, Dayan T. and Simberloff D. 2007. Non-indigenous insect species in Israel and adjacent areas. Biological Invasions 9: 629-643.
- Roll U.**, Dayan T., Simberloff D. and Goren M. 2007. Characteristics of the introduced fish fauna of Israel. Biological Invasions 9: 813-824.
- Roll U.**, Dayan T. and Simberloff D. 2008. Non-indigenous land vertebrates in Israel and adjacent areas. Biological Invasions, 10: 659-672.
- Roll U.**, Dayan T., Simberloff D. and Mienis H. 2009. Non-indigenous land- and freshwater gastropods in Israel. Biological Invasions 11: 1963-1972.
- Mandelik Y. and **Roll U.** 2009. Diversity patterns of wild bees in almond orchards and their surrounding landscape. Israel Journal of Plant Sciences, 57: 185-191.
- Roll U.**, Stone L. and Meiri S. 2009. Hot-spot facts and artifacts – questioning Israel's great biodiversity. Israel Journal of Ecology and Evolution, 55: 263-279.
- Munwes I., Geffen E., **Roll U.**, Tikochinski Y., Friedmann A. and Gafny S. 2010. A gradual increase in genetic diversity towards the distribution edge of the eastern spadefoot toad (*Pelobates syriacus*). Molecular Ecology 19: 2675-2689.
- Mandelik Y., **Roll U.** and Fleischer A. 2010. Cost-efficiency of biodiversity indicators for Mediterranean ecosystems and the effects of socio-economic factors. Journal of Applied Ecology, 47: 1179–1188.
- Katriel G., Yaari R., Huppert A., **Roll U.** and Stone L. 2011. Modeling the initial phase of the 2009 H1N1 influenza pandemic in Israel. Journal of the Royal Society Interface, 8: 856–867.
- Roll U.**, Yaari R., Katriel G., Barnea O., Stone L., Mendelson E., Mendelboim M. and Huppert A. 2011. Onset of a pandemic: characterizing and modeling the initial phase of the swine flu (H1N1) epidemic in Israel. BMC Infectious Diseases, 11:92.
- Roll U.**, Stone L., Grenyer R. and Meiri S. 2011. Not so holy after all. Israel Journal of Ecology and Evolution, 57: 193-204.
- Amichai E, Levin E., Kronfeld-Schor N., **Roll U.** and Yom-Tov Y. 2012. Natural history, physiology and energetic strategies of *Asellia tridens* (Chiroptera). Mammalian Biology, 78: 94-103.
- Huppert A., Barnea O., Katriel G., Yaari R., **Roll U.** and Stone L. 2012. Modeling and Statistical Analysis of the Spatio-temporal Patterns of Seasonal Influenza in Israel. PLoS One 7: e45107.
- Levin E., **Roll U.**, Dolev A., Yom-Tov Y. and Kronfeld-Schor N. 2013. Bats of a Gender Flock Together: Sexual Segregation in a Subtropical Bat. PLoS One 8: e54987.
- Axelsen J.B., **Roll U.**, Stone L. and Solow A. 2013. Species-area relationships always overestimate extinction rates from habitat loss: Comment. Ecology 94: 761-763.
- Roll U.**, Tallowin O., Berkowic D., Maza E., Ostrometzky O., Slavenko A., Tamar K. and Meiri S. 2013. Rueppel's Snake-eyed skink, *Ablepharus rueppellii* (Gray, 1839) (Reptilia: Squamata: Scincidae): distribution extension and geographic range in Israel. Check List, 9: 458-464.
- Solow A., Beet, A., **Roll U.** and Stone L. 2014. A test for a shift in the boundary of the geographical range of a species. Biology Letters, 10: 20130808.
- Scharf I., Feldman A., Novosolov M., Pincheira-Donoso D., Das I., Böhm M., Uetz P., Torres-Carvajal, O., Bauer A., **Roll U.** and Meiri S. 2015. Late bloomers and baby boomers: ecological drivers of longevity in squamates and the tuatara. Global Ecology and Biogeography, 24: 396–405.

- Roll U.**, Geffen E. and Yom-Tov Y. 2015. Linking vertebrate species richness to tree canopy height on a global scale. Global Ecology and Biogeography, 24: 814-825.
- Barkan S., **Roll U.**, Yom-Tov Y., Wassenaar L.I. and Barnea A. 2016. Possible linkage between neuronal recruitment and flight distance in migratory birds. Scientific Reports, 6, 21983; doi: 10.1038/srep21983.
- Roll U.**, Mittermeier J.C., Diaz I. G., Novosolov M., Feldman A., Itescu Y., Meiri S. and Grenyer R. 2016. Using Wikipedia page views to explore the cultural importance of global reptiles. Biological Conservation, 204A 42-50.
- Lewin A., Feldman A., Bauer A., Belmaker J., Chirio L., Broadley D.G., Itescu Y., LeBreton M., Maza E., Meirte D., Nagy Z., Novosolov M., **Roll U.**, Tallowin O., Trape J-F., Vidan E., and Meiri S. 2016. Patterns of species richness, endemism, and environmental gradients of African reptiles. Journal of Biogeography, 43:2380–2390.
- Vidan E., **Roll U.**, Bauer A., Grismer L., Guo P., Maza E., Novosolov M., Sindaco R., Wagner P., Belmaker J. and Meiri S. 2017. The Eurasian hot nightlife - environmental forces associated with nocturnality in lizards. Global Ecology and Biogeography 26:1316–1325.
- Roll U.**, Feldman A., Novosolov M., Allison A., Bauer A., Bernard R., Bohm M., Chirio L., Collen B., Colli G.R., Dabul L., Das I., Doan T., Grismer L., Herrera F.C., Hoogmoed M., Itescu Y., Kraus F., LeBreton M., Lewin A., Martins M., Maza E., Meirte D., Nagy Z., Nogueira C.C., Pauwels O.S.G., Pincheira-Donoso D., Powney G., Sindaco R., Tallowin O., Torres-Carvajal O., Trape J.F., Uetz P., Vidan E. Wagner P., Wang Y.Z., Orme D., Grenyer R. and Meiri S. 2017. The global distribution of tetrapods reveals a need for targeted reptile conservation. Nature Ecology and Evolution, 1:1677–1682.
- Meiri S., Bauer A.M., Castro-Herrera F., Chirio L., Colli G., Das I., Doan T., Glaw, F., Grismer L.L., Hoogmoed M., Kraus F., LeBreton M., Meirte D., Nagy Z.T., Nogueira C., Oliver P., Pauwels O., Pincheira-Donoso D., Shea G., Sindaco R., Tallowin O., Torres-Carvajal, O., Trape J-T, Uetz P., Wagner P., Ziegler T. and **Roll U.** 2017. Extinct, obscure or imaginary: the lizard species with the smallest ranges. Diversity and Distributions, 24: 262-273.
- Renan S., Gafny S., Perl B., **Roll U.**, Malka Y., Vences M. and Geffen E. 2017. Living quarters of a living fossil - Uncovering the current distribution pattern of the rediscovered Hula painted frog *Latonia nigriventer* using environmental DNA. Molecular Ecology 26: 6801–6812.
- Roll U.** Correia R. and Berger-Tal O. 2018. Using machine learning to disentangle homonyms in large text corpora. Conservation Biology 32: 716-724.
- Roll U.**, Iwamura T., and Berger-Tal O. 2018. National conservation science conferences as a means of bridging conservation science and practice. Conservation Biology, 32: 1200-1202.
- Keren-Rotem T., **Roll U.**, Bouskila A. and Geffen E. 2018. The contextual separation of lateral white line patterns in chameleons. Royal Society Open Science, 5: 171235.
- Mendlovic S., Saad A., **Roll U.**, Ben-Yehuda A., Tuval-Mashiach R. and Atzil-Slonim D. 2018. The Association between Patient-Therapist MATRIX Congruence and Treatment Outcome. Psychotherapy Research, 29:935-946.
- Roll U.** and Berger-Tal O. 2018. Gritty until proven irritant - what makes a species invasive? Comment on Cassinello (2018). Conservation Letters e12597; DOI: 10.1111/conl.12597.
- Slavenko A., Feldman A., Allison A., Bauer A. M., Böhm M., Chirio L., Colli G. R., Das I., Doan T. M., Hoogmoed M. S., LeBreton M., Martins M., Meirte D., Nagy Z. T., Nogueira C. de C., Pauwels O.S.G., Pincheira-Donoso D., **Roll U.**, Wagner P., Wang Y., and Meiri

- S. Global patterns of body size evolution in squamate reptiles are not driven by climate. Global Ecology and Biogeography 28: 471-483.
- Mittermeier J.C., **Roll U.**, Matthews T.J., & Grenyer R. 2019. A season for all things: phenological imprints in Wikipedia usage and their relevance to conservation. PLoS Biology, 17: e3000146.
- Correia, R.A., Di Minin, E., Jaric, I., Jepson, P., Ladle, R., Mittermeier, J., **Roll, U.** Soriano-Redondo, A. & Verissimo, D. 2019. Caution with claims of changes in public interest derived from search engine data. Frontiers in Ecology and the Environment, 17: 254-255.
*all authors contributed equally to the paper.
- Yom-Tov Y., Balaban A., Hadad E., Weil G., and **Roll U.** 2020. The plight of the endangered mountain gazelle *Gazella gazella*. Oryx, DOI:10.1017/S003060531900108X
- Pigot A.L., Sheard C., Miller E.T., Bregman T.P., Freeman B. G., **Roll U.**, Seddon N., Trisos C. H., Swindlehurst D., Weeks B.C., Tobias J.A. 2020. Macroevolutionary convergence connects morphological form to ecological function in birds. Nature Ecology and Evolution, 4: 230-239.
- Jarić I., Correia R.A., Brook B.W., Buettel J.C., Courchamp F., Di Minin E., Firth J., Gaston K.J., Jepson P., Kalinkat G., Ladle R., Soriano-Redondo A., Souza A.T. & **Roll U.** 2020 iEcology: harnessing the Big Data revolution to gain insights into the natural world. Trends in Ecology and Evolution 35: 630-639.
- Gumbs R., Claudia L. C.I., Böhm M., Hoffmann M., Grenyer R., Jetz W., Meiri S., **Roll U.**, Owen N.R., Rosindell J. 2020. Global priorities for conservation of reptilian phylogenetic diversity in the face of human impacts. Nature Communications 11: 2616.
- Roll U.**, Meiri S. Glass houses? – comment on ‘decolonising biogeography’. Frontiers in Biogeography. 12(2) doi:10.21425/F5FBG46908
- Meiri S., Avila L., Bauer A.M., Chapple D.G., Das I., Doan T.M., Doughty P., Ellis R., Grismer L., Kraus F., Morando M., Oliver P., Pincheira-Donoso D., Ribeiro-Junior M. A., Shea G., Torres-Carvajal O., Slavenko A., and **Roll U.** 2020 The global diversity and distribution of lizard clutch sizes. Global Ecology and Biogeography 29: 1515-1530.
- Jarić I, **Roll U.**, Arlinghaus R., Belmaker B., Chen Y., China V., Douda K., Essl F., Jähnig SC., Jeschke J.M., Kalinkat G., Kalous L., Ladle R., Lennox R.J., Rosa R., Sbragaglia V., Sherren K., Šmejkal, M., Soriano-Redondo A., Souza A.T., Wolter C. & Correia R.A. 2020. Expanding conservation culturomics and iEcology from terrestrial to aquatic realms. PLoS Biology, 18: e3000935.
- Vardi R., Mittermeier J. & **Roll U.** 2021. Combining culturomic sources to uncover trends in popularity and seasonal interest in plants. Conservation Biology 35: 460-471.
- Correia R., Ladle R., Jaric I., Jepson P., Malhado A., Mittermeier J., **Roll U.**, Soriano-Redondo A., Verissimo D., dos Santos J. D., Fink C., Hausmann A., Vardi R., Di Minin E. 2021. Digital data sources and methods for conservation culturomics. Conservation Biology 35: 398-411.
- Jarić I., Bellard C., Correia R. A., Courchamp F., Douda K., Essl F., Jeschke J.M., Kalinkat G., Kalous L., Lennox R.J., Novoa A., Proulx R., Pyšek P., Soriano-Redondo A., Souza A.T., Vardi R., Verissimo D. & **Roll U.** 2021. Invasion culturomics and iEcology. Conservation Biology 35: 447-451.
- Goddard M.A., et al. (including **Roll U.**). 2021. A global horizon scan of the future impacts of robotics and autonomous systems on urban ecosystems. Nature Ecology and Evolution 5: 219-230.

- Mittermeier J.C., Correia R., Grenyer R, **Roll R.** 2021. Using Wikipedia to measure public interest in biodiversity. Conservation Biology 35: 412-423.
- Mittermeier J.C., **Roll R.**, Matthews T.J., Correia R., Grenyer R. 2021. Birds that are more commonly encountered in the wild attract higher public interest online. Conservation Science and practice, e340.
- Correia R., Ladle R. and **Roll U.** 2021. Special Section: Advancing Conservation Culturomics - Introduction. Conservation Biology 35: 395-397.
- Vardi R., Berger-Tal O. & **Roll U.** 2021. iNaturalist insights illuminate COVID-19 effects on large mammals in urban centers. Biological Conservation 254: 108953.
- Meiri S., Murali G., Zimin A., Shak L., Itescu Y. Caetano G.H.O. and **Roll U.** 2021. Different solutions lead to similar life history traits across the great divides of the amniote. The Journal of Biological Research-Thessaloniki, 28: 3.
- China V., Zvuluni A., **Roll U.** & Belmaker J. 2021. Reduced human activity in shallow reefs during the COVID-19 pandemic is associated with increased fish biodiversity across scales due to increased evenness, not abundance. Biological Conservation 257: 109103.
- Chapple C.G., **Roll U.** et al. 2021. Conservation status of the world's skinks (Scincidae): taxonomic and geographic patterns in extinction risk. Biological Conservation 257, 109101.
- Bates A., et al. including **Roll U.** 2021. Global COVID-19 lockdown highlights humans as both threats and custodians of the environment. Biological Conservation 263: 109175.
- Roll U.**, Jaric I., Jepson P., da Costa Pinto A.L., Pinheiro B.R., Correia R.A., & Malhado A.C.M., & Ladle R.J. 2021. COVID-19 lockdowns increase public interest in urban nature. Frontiers in Ecology and the Environment 19: 320-322.
- Murali G., Gumbs R., Meiri S, & **Roll U.** 2021. Global determinants and conservation of evolutionary and geographic rarity in land vertebrates. Science Advances 7, eabe5582.
- Jung, M. et al. including **Roll U.** 2021. Areas of global importance for terrestrial biodiversity, carbon, and water. Nature Ecology and Evolution, 5: 1499–1509.
- Murali G., Caetano G.H.O., Barki G., Meiri S., & **Roll U.** 2022. Emphasising declining populations in the Living Planet Report. Nature, 601: E20–E24.
- Perl R.G.B., Avidor E., **Roll U.**, Geffen E. Gafny^{PI} S. 2022. Using eDNA presence/absence data to characterize the abiotic and biotic habitat requirements of a rare, elusive amphibian. Environmental DNA, DOI:10.1002/edn3.276.
- Jarić I., **Roll U.** Bonaiuto, M., Brook, B.W., Courchamp, F., Firth, J.A., Gaston, K.J., Heger, T., Jeschke, J.M., Ladle, R.J., Meinard, Y., Roberts, D.L., Sherren, K., Soga, M., Soriano-Redondo, A., Veríssimo, D., & Correia, R.A. 2022. Societal extinction of species. Trends in Ecology and Evolution <https://doi.org/10.1016/j.tree.2021.12.011>.
- Cox N. et al. including **Roll U.** 2022. Global reptile assessment reveals commonality of tetrapod conservation needs. Nature, 605: 285–290.
- Caetano G.H.O., Chapple D.G., Grenyer R., Raz T., Rosenblatt J., Tingley R., Böhm M., Meiri S. & **Roll U.** 2022. Automated assessment reveals that the extinction risk of reptiles is widely underestimated across space and phylogeny. PLoS Biology, 20: e3001544.
- Jarić I., ..., **Roll U.** Transience of public attention in conservation science. Frontiers in Ecology and the Environment. In Press.
- Zimin, A., ..., **Roll, U.**, Meiri, S. 2022. A global analysis of viviparity in squamates highlights its prevalence in cold climates. Global Ecology and Biogeography 31: 2437-2452.
- Meiri, S., Chapple, D.G., Tolley, K.A., Mitchell, N., Laniado, T., Cox, N., Bowls, P., Young, B.E., Caetano, G., Geschke, J., Böhm, M., **Roll, U.** 2023. Done but not dusted: Reflections

on the first global reptile assessment and priorities for the second. Biological Conservation 278, 109879.

Murali, G., Iwamura, T., Meiri, S., **Roll, U.** 2023. Future temperature extremes threaten land vertebrates. Nature.

Published scientific reports and technical papers

Visconti P. et al. (including **Roll U.**). 2018. Status, trends and future dynamics of biodiversity and ecosystems underpinning nature's contributions to people. In: M. Rounsevell, M. Fischer, A. Torre-Marín Rando, & A. Mader (Eds.) The IPBES regional assessment report on biodiversity and ecosystem services for Europe and Central Asia. Bonn: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Caetano G., **Roll U.**, Veríssimo D. 2021. Measuring global awareness of nature. On the Edge Conservation. London, UK. Available at: <https://doi.org/10.31219/osf.io/sbg96>

Outreach articles published in non peer-reviewed journals

Gavrieli Y. and Roll U. 2003. Is there balance in nature? Maydaon – high school teachers periodical. 12: 34-39 (in Hebrew).

Roll U. 2004. Invasive animal species in the terrestrial and aquatic habitats of Israel. Science in the environment, Israel Ministry of the Environment internet publication. (in Hebrew).

Roll U. 2005. Invasive insects in Israel. Beshvil Ha'aretz. 8: 32-36. (in Hebrew).

Huppert A., Katriel H., Yaari R., Barnea O., Roll U., Stern E., Balicer R. and Stone L. 2010. Mathematical Models as a Tool for Studying and Developing Strategies in the Case of a Pandemic Influenza Outbreak. Harefuah, 149:4-8 (in Hebrew, English abstract).

Roll U., Stone L. and Meiri S. 2010. Is Israel indeed a biodiversity hotspot? Ecology and environment 3, 24-35. (in Hebrew).

Roll U. 2016. Migrants following humans. Song of Science, 84-85 (Weitzman institute of science publication, in Hebrew).

Roll U., Belmaker J., Bar-David S., Dor R., Vidan E., Saltz D., Yom-Tov Y., Levinski I., Meiri S., Renan I., Shwartz A., Spiegel O. and Berger-Tal O. 2018. No compassion in conservation inaction. Ecology and environment 9, 58-60. (in Hebrew).

Lehnardt Y., Murali, G. Roll U., and Berger-Tal O. 2022. No respite – influence of road noise pollution on animal behavior seeps into the cores of protected and open landscapes in Israel. Ecology and Environment 13: (in Hebrew)

Roll U. 2022. Book review – 'Extinctions and changes – Israel's past wildlife'. Ecology and Environment (in Hebrew)