

January 12, 2024

ADI BAROCAS

RESEARCH ASSOCIATE

San Diego Zoo Wildlife Alliance

WildCRU, Zoology, University of Oxford

[Google Scholar profile](#)

[ResearchGate profile](#)

[Website](#)

adibarocas@gmail.com

EDUCATION

- | | |
|---|-------------|
| Ph.D., Ecology, University of Wyoming | 2016 |
| Thesis: Coastal river otter (<i>Lontra canadensis</i>) sociality and demography in a changing environment. Supervisor: Dr. Merav Ben-David | |
| M.Sc., Zoology, Tel Aviv University | 2010 |
| Thesis: Aspects of sociality in the rock hyrax <i>Procavia capensis</i> : social structure and factors predicting adult longevity. Supervisor: Dr. Eli Geffen | |
| B.Sc., Biology, Tel Aviv University | 2005 |

APPOINTMENTS

- | | |
|--|------------------|
| Senior Lecturer, Tel-Hai Academic College | 2023- |
| Senior Lecture, Galilee research Institute | 2023- |
| Research Associate, WildCRU, Zoology, University of Oxford | 2022-2023 |
| Researcher, San Diego Zoo Wildlife Alliance | 2022-2023 |
| Postdoctoral fellow, WildCRU, Zoology, University of Oxford | 2017-2022 |
| Supervisor: Dr. David MacDonald | |
| Postdoctoral fellow, San Diego Zoo Wildlife Alliance | |
| Supervisor: Dr. Ronald Swaisgood | |
| | 2017-2022 |

PUBLICATIONS

PEER-REVIEWED

28. Keren-Rotem T., Main D.M, **Barocas A.**, Donaire-Barroso D., Haddas-Sasson M., Vila C., Shaharabany T., Wolf L., Tolley K.A., and Geffen A. Genetic and behavioral factors affecting interpopulation color pattern variation in two congeneric chameleon species. *Royal Society Open Science*, *In press*.
27. **Barocas A.**, C. Vega, A. Alarcón Pardo*, J.M. Araujo Flores, J. Groenendijk, J. Pisconte*, D.W. Macdonald, and R.R Swaisgood (2023). Intensity of local artisanal gold mining drives mercury accumulation in neotropical oxbow lake fishes. *Science of the Total Environment*, 2023, vol. 886, p 164024.
26. **Barocas A.**, M.W. Tobler, N. Abanto Valladares*, A. Alarcon Pardo*, D.W. Macdonald, and R.R. Swaisgood. Protected areas maintain neotropical freshwater bird biodiversity in the face of human activity (2023). *Ecological Indicators*, 2023, 150, 110256
25. Abanto Valladares N.*, Alarcon Pardo A.*, Chiaverini L., J. Groenendijk , Harrington L., D.W. Macdonald, R.R. Swaisgood and **Barocas A.** (2022). High-resolution drone imagery reveals drivers of fine-scale giant otter habitat selection in the land-water interface. *Conservation Science and Practice* e12786. <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/csp2.12786>.
24. **Barocas A.** †, Hefner R. †, Ucko M. †, Shalmon, B, Leader, N., and Geffen E. (2022) Ruppell's fox movement and spatial behavior are influenced by topography and human activity. *Biodiversity and Conservation* 31: 1345-1357.
23. **Barocas A.**, Farfan J., Groenendijk J., Mendoza J., Silva J., Mujica O., Ochoa A.J. A., Macdonald D.W, and Swaisgood R.R. (2022). Disturbance-specific behavioral responses of giant otters exposed to ecotourism and extractive activities. *Animal Conservation* 25: 15-26. <https://doi.org/10.1111/acv.12713>
22. Cuya, A. *, J.A. Glikman, J. Groenendijk , D.W. Macdonald, R.R. Swaisgood and **Barocas A.**(2021). Socio- environmental perceptions and barriers to conservation engagement among artisanal small-scale gold mining communities in Southeastern Peru. *Global Ecology and Conservation* 31: e01816. <https://doi.org/10.1016/j.gecco.2021.e01816>
21. **Barocas A.**, Araujo Flores J., Alarcon Pardo A.*, Macdonald D.W, and Swaisgood R.R. (2021). Reduced dry season fish biomass and depleted carnivorous fish assemblages in unprotected tropical oxbow lakes. *Biological Conservation* 257: 109090.
20. **Barocas A.**, Golden, H.N., Dudenhoefler, M. *, and Ben-David, M. (2021). Sociality and signaling activity modulate information flow in river otter communication networks. *Behavioral Ecology* 32: 60-68.
19. Weissman Y., Demartsev V., Ilany A., **Barocas A.**, Bar-Ziv E., Koren L., and Geffen E. and (2020). A crescendo in the inner structure of snorts: a reflection of increasing arousal in rock hyrax songs. *Animal Behavior* 166: 163-170.

18. Demartsev V., Gordon N., **Barocas A.**, Bar-Ziv N., Ilany T., Goll Y., Ilany A. and Geffen E. (2019). The "Law of Brevity" in animal communication: Sex-specific signaling optimization is determined by call amplitude rather than duration. *Evolution Letters* 3: 623-634
 17. Koren L. , Weissman Y., Shnitzer I., Beukeboom R., Bar-Ziv E., Demartsev V., **Barocas A.**, Ilany A. and Geffen E. (2019). Sexually opposite effects of testosterone on mating success in wild rock hyrax. *Behavioral Ecology*, 30: 1611-1617.
 16. Weissman Y., Demartsev V., Ilany A., **Barocas A.**, Bar-Ziv E., Shnitzer I., Geffen E. and Koren L. (2019). Social context mediates testosterone's effect on snort acoustics in male hyrax songs. *Hormones and Behavior* 114:104535. <https://doi.org/10.1016/j.yhbeh.2019.05.004>
 15. Demartsev V., Kershenbaum A., Ilany A., **Barocas A.**, Weissman Y., Koren L., Geffen E. (2019). Lifetime changes in vocal syntactic complexity of rock hyrax males are determined by social class. *Animal Behavior* 153: 151-158
 14. Weissman Y., Demartsev V., Ilany A., **Barocas A.**, Bar-Ziv E., Shnitzer I., Geffen E. and Koren L. (2018). Acoustic stability in hyrax snorts: vocal tightrope-walkers or wrathful verbal assailants? *Behavioral Ecology* <https://doi.org/10.1093/beheco/ary141>
 13. **Barocas A.** †, Hefner R. †, Ucko M. †, Merkle J.A., Geffen E. (2018). Behavioral adaptations of a large carnivore to human activity in an extremely arid landscape. *Animal Conservation* 21 (5), 433-443
 12. Perl R.G.B., Geffen E., Malka Y., **Barocas A.**, Renan S., Vences M., Gafny S. (2018). Population genetic analysis of the recently rediscovered Hula painted frog (*Latonia nigriventer*) reveals high genetic diversity and low inbreeding. *Scientific reports* 8 (1), 5588.
 11. Zero V.H[†], **Barocas A.**[†], Jochimsen D., Pelletier A., Giroux-Bougard X., Trumbo D., Castillo J., Evans-Mack D., Linell M., Pigg R., Hoisington-Lopez J., Spear S., Murphy M. and Waits L.P. (2017). Complementary network-based approaches reveal conservation priorities for two vulnerable ground squirrel species. *Frontiers in Genetics* 8: 1-13 <https://doi.org/10.3389/fgene.2017.00081>.
- † equal contribution
10. Demartsev V., Ilany A., Kershenbaum A., Geva Y., Margalit O., Shnitzer I., **Barocas A.**, Bar-Ziv E., Koren L., Geffen E. (2017). The progression pattern of male hyrax songs and the role of climactic ending. *Scientific Reports* 7: 2794. [10.1038/s41598-017-03035-x](https://doi.org/10.1038/s41598-017-03035-x) .
 9. Demartsev, V., Ilany A., **Barocas A.**, Bar-Ziv E., Geffen E. (2016). A mixed strategy of counter-singing behavior in male rock hyrax vocal competitions. *Behavioral Ecology and Sociobiology* 70: 2185-2193.
 8. **Barocas A.**, Golden, H.N., Harrington. M., McDonald, D.B., Ben-David, M. (2016). Coastal latrine sites as social information hubs and drivers of river otter fission-fusion dynamics. *Animal Behavior* 120: 103-114.
 7. Bar-Ziv E., Ilany A., Demartsev V., **Barocas A.**, Geffen E., Koren L., (2016). Individual, social, and sexual niche traits affect copulation success in a polygynandrous mating system. *Behavioral Ecology and Sociobiology* 70: 901-912.

6. Demartsev V., Kershenbaum A., Ilany A., **Barocas A.**, Bar-Ziv E., Koren L., Geffen E. (2014). Male hyraxes increase song duration and syntax complexity in the presence of alert individuals. *Behavioral Ecology* 25: 1451-1458.
5. Ilany A., **Barocas A.**, Koren L., Kam M., Geffen E. (2013). Structural balance in the networks of a wild mammal. *Animal Behavior* 85: 1397-1405.
4. Cohen, O., **Barocas A.**, Geffen, E. (2013) Conflicting management policies for the Arabian wolf in the Negev Desert: Is this justified? *Oryx* 47: 228-236.
3. Ilany A., **Barocas A.**, Kam M., Ilany T., Geffen E. (2013). The energy cost of singing in wild rock hyrax males: evidence for an index signal. *Animal Behavior* 85: 995-1001.
2. **Barocas A.**, Ilany A., Koren L., Kam M., Geffen E. (2011). Variance in social network centrality within rock hyrax groups predicts adult longevity. *PLoS ONE* 6(7): e22375. doi:10.1371/journal.pone.0022375.
1. Ilany A., **Barocas A.**, Koren L., Kam M., Geffen E. (2011). Male rock hyraxes exploit conspecific calls to gain attention. *PLoS ONE* 6(12): e28612. doi:10.1371/journal.pone.0028612.

BOOK CHAPTERS

1. **Barocas A.**, Ben-David, M. (2021). Inter and intraspecific variation in the social structure of marine otters. *In Ethology of Sea and Marine Otters and the Polar Bear* (Randall Davis and Anthony Pagano, Eds.). Springer International.

IN REVIEW

Benson J., Keiter D., Mahoney P., Allen B., Allen L., Alvares F., Anderson M., Barber-Meyer S., **Barocas A.** et al. Intrinsic and environmental drivers of social cohesion in wild canids. *Journal of Animal Ecology*.

Barocas A., Macdonald DW, Swaisgood RR. Protected area erosion and downgrading may reduce coverage and connectivity of neotropical freshwater megafauna. *Conservation Letters*.

PREPARATION

Barocas A., Golden, HN, Albeke S, Ott KE, Saalfeld D, Ben-David, M. Demographic and genetic effects of multiple stressors on coastal Alaska river otters: the importance of monitoring and harvest-free spatial refugia. Target: Wildlife Monographs.

*Mentored assistants and graduate students

SELECTED CONFERENCE PRESENTATIONS

- Barocas A.**, Vega C, Alarcón Pardo A, Araujo Flores JM, Groenendijk J, Pisconte J, Macdonald DW, Swaisgood RR (2022). Gold mining activity and mercury accumulation in neotropical oxbow lake fishes. Symposium on Mercury Research in the Amazon (*Puerto Maldonado*, Peru).
- Barocas A.**, Araujo Flores J., Alarcon Pardo A., Macdonald D.W, and Swaisgood R.R. (2021). Reduced dry season fish biomass and depleted carnivorous fish assemblages in unprotected tropical oxbow lakes. International Congress for Conservation Biology (*Rwanda, virtual lecture*).
- Barocas A.**, Hefner R., Ucko M., Shalmon, B., Leader, N., Geffen E. (2020) Spatial partitioning mitigates the impacts of red fox occurrence on the desert adapted Ruppell’s fox. Israel Zoological Society Virtual Conference. (*Israel, Zoom lecture*)
- Barocas A.** (2019) Investigating the effects of gold mining on giant otters in the Madre de Dios basin. AIDER Biological Research and Monitoring in Protected Areas Symposium. (*Puerto Maldonado, Peru; In Spanish*)
- Barocas A.**, Golden, H., Ben-David M. (2019). Demographic effects of harvest on coastal Alaska river otters: the importance of spatial refugia. *International Otter Conference (Tiangjiahe, China)*.
- Barocas A.**, Hefner, R., Ucko, M., Merkle, J.A, Geffen, E. (2017). Arabian wolves spatially favour but temporally avoid humans in an extremely arid landscape. *12th International Mammalogical Congress (Perth, Australia)*.
- Barocas A.**, Hefner, R., Ucko, M., Merkle, J.A, Geffen, E. (2017) Behavioral adaptations of a large carnivore to human activity in an extremely arid landscape. *Israeli conference for Conservation Science (Sede-Boker, Israel)*.
- Barocas A.**, Golden, H.N., Ben-David M. (2016). Coastal Alaska river otter population status is associated with shifts in oceanic conditions. *American Society of Mammalogists, annual meeting (Minneapolis, MN)*.
- Barocas A.**, Golden, H.N., Ben-David M. (2015). Latrine visits and fission-fusion dynamics in coastal Alaska river otters. *Animal Behavior Society, annual meeting (Anchorage, AK)*
- Barocas A.**, Golden, H.N., Ben-David M. (2013). Quantifying coastal river otter association rates and signaling dynamics with an Encounternet tracking system. *Animal Behavior Society, annual meeting (Boulder, CO)*.
- Barocas A.**, Zero V.H, Pelletier A., Trumbo D., Castillo J., Giroux-Bougard X., Jochimsen D., Linell M., Pigg R., Lohr K., Evans-Mack D., Spear S., Murphy M. and Waits L.P. (2013). Population genetics and conservation of Idaho ground squirrels. *International Association of Landscape Ecology meeting (Austin, TX)*.
- Barocas A.**, Golden, H.N., Ben-David M. (2013). Catch you at the latrine – Measuring association rates among coastal river otters. *Wild musteloid conference (Oxford, UK)*. Abstract published.
- Barocas A.**, Ilany A., Koren L., Kam M., Geffen E. (2012). Smaller social groups help rock hyraxes live longer. Poster presentation. *International Society of Behavioral Ecology meeting (Lund, Sweden)*.
- Barocas A.**, Ilany A., Koren L., Kam M., Geffen E. (2011). Variance in social network centrality within rock hyrax groups predicts longevity. *Animal Behavior Society, annual meeting (Bloomington, IN)*.

OTHER SELECTED PRESENTATIONS

- Barocas A.** (2023) Impacts of gold mining on giant otter populations and Amazon freshwater ecosystems. Nature Explorer’s “Cultural Thursday”. (*Online presentation; In Spanish*).

- Barocas A. (2023) Impacts of gold mining on giant otter populations and Amazon freshwater ecosystems. (*Tambopata NP Anniversary Symposium, Puerto Maldonado, Peru; In Spanish*).
- Barocas A. (2023) The Peru giant otter program as a case study for the contribution of carnivore research to freshwater ecosystem conservation. *Hula research center, Israel (In Hebrew)*.
- Barocas A. (2022) Protected areas and their contribution to conserving freshwater ecosystems. *Manu National Park Anniversary Symposium. (Online presentation; In Spanish)*.
- Barocas A. (2021) Protected areas in the Southwestern Amazon contribute to the conservation of giant otters and freshwater biodiversity. *Wyoming Chapter of the Wildlife Society, Laramie, Wyoming*.
- Barocas A. (2021) Differences in the behavior of giant otters exposed to human activity. *Experiences in giant otter observation tourism webinar (Online presentation; In Portuguese)*.
- Barocas A. (2021) Protected areas in Madre de Dios contribute to the conservation of aquatic ecosystems. *Webinar: Biodiversity and giant otter research in Madre de Dios and the Peruvian Amazon (Online presentation; In Spanish)*.
- Barocas A. (2020) Carnivore research for conservation: Stories from diverse ecosystems. *Winnipeg Chapter of The wildlife Society (Online presentation)*.
- Barocas A. (2019) Working for the conservation of Amazon aquatic ecosystems: first steps of the giant otter project. *Research experiences in Manu National Park Symposium. (Universidad Andina, Cusco, Peru; In Spanish)*.
- Barocas A. (2018) Working for the conservation of Amazon aquatic ecosystems: first steps of the giant otter project (*Cocha Cashu Biological Station, Peru; In Spanish*).
- Barocas A. (2017) Investigating the sociality, movement and demography of carnivores and their implications for conservation. *San Diego Zoo's Conservation Institute (San Diego, California)*.
- Barocas A. (2017) Coastal river otter sociality and demography in a changing environment. *WildCRU, University of Oxford (Oxford, UK)*.

JOURNAL REFEREE

Journal of Applied Ecology (1), Wildlife Monographs (1), Ecology and Evolution (1), Biodiversity and Conservation (1), Journal of Biogeography (1), Global Ecology and Conservation (2), Frontiers in Conservation Science (1), Animal Behavior (4), Behavioral Ecology (3), Current Zoology (1), PeerJ (1), Scientific Reports (1), Journal of Mammalogy (5), Journal of Wildlife Management (1), Ethology (1), Molecular Ecology Resources (1), Prairie Naturalist (1), Canid Biology and Conservation (1).

TEACHING EXPERIENCE

Workshop - Basic R, graphics, Generalized Linear Mixed Models	Wallace Tropical Ecology course, San Diego Zoo Global Peru	2018
Workshop - Generalized Linear Mixed Models	Wallace Tropical Ecology course, San Diego Zoo Global Peru	2017
Guest lecture– Spatially Explicit Capture-Recapture Models Workshop - Non-invasive techniques for monitoring furbearers and their prey	Wildlife Ecology course, University of Wyoming	2016
Guest lecture– Quantifying animal behavior	Alaska TWS conference	2015
Guest lecture– Population genetics	Wildlife Ecology course, University of Wyoming	2013, 2014
Wildlife Ecology and management	Wildlife Ecology course, University of Wyoming Teaching Assistant –	2014
Vertebrate Zoology	Teaching Assistant – University of Wyoming Teaching Assistant – Tel- Aviv University	2012-2014 2008-2010

Diploma student and graduate Mentoring: Nicole Abanto Valladares (Diploma Course; 2018-2020), Claire Marr (Integrated Master’s, 2018-2020), Alessandra Cuya (M.Sc., 2020-2022), Claire Marr (Ph.D.; 2021-), Guy Shavit (M.Sc., 2023-).

Undergraduate and assistant Mentoring: Alejandro Alarcon Pardo (2018-), Estrella Velasquez (2021-), I. Guzman (2021-2022), L. Von Hildebrand (2018), M. Dudenhoeffer (2016), C. Bopp (2015), K. Askelson (2014-2105), R. Riotta (2015-2016), S. Locker (2014-2016), D. Edwards, M. Wood, J. White (2012).

SCHOLARSHIPS & AWARDS

People’s Trust for Endangered Species research award for giant otter project (\$135,000)	2017-2022
Student Creative Activities Grant , Haub School, University of Wyoming (\$1,000)	2014
OSRI graduate fellowship , Oil Spill Research Institute, Alaska (\$75,000)	2014-2017
Menkens Graduate Award , University of Wyoming (\$15,000)	2013
Conference Travel award , <i>International Society of Behavioral Ecology</i> (\$1,500)	2012
M.Sc. fellowship , Department of Zoology, Tel Aviv University (\$18,000)	2007-2009
Award for Teaching Excellence , Department of Zoology, Tel Aviv University (\$750)	2009

SPECIAL TRAINING

Conservation Standards training course (San Diego Zoo Wildlife Alliance, 2022)
Animal Movement and Habitat Selection course (J. Merkle, University of Wyoming, 2016)
Spatial Modeling course (S.D. Prager, University of Wyoming, 2013)
IDGS Landscape Genetics course and workshop (M. Murphy, University of Wyoming, 2012)
Mark-Recapture workshop (G.E. White, Sede-Boker campus, 2008).

LANGUAGE PROFICIENCY

Language	Reading	Writing	Oral
English	Fluent	Fluent	Fluent
Spanish	Fluent	Fluent	Fluent
Portuguese	Native speaker	Native speaker	Native speaker
Hebrew	Native speaker	Native speaker	Native speaker

PROFESSIONAL AFFILIATIONS

IUCN Otter Specialist Group (2017-present); Israel Society of Conservation Biology (2018-present);
International Society of Conservation Biology (2017-present); American Society of
Mammalogists (2016-present)

MEDIA COVERAGE

[Madre de Dios: Illegal mining increases mercury contamination and deforestation \(2023\).](#) *La Republica newspaper, Peru.*

[One of Israel's Rarest Predators Is at Risk of Extinction. All It Needs Is a Bit of Space \(2022\).](#) *Ha'aretz newspaper, Israel.*

[Giant river otters – South America's river wolf \(2022\).](#) Amazing Wildlife podcast, *IHeart Podcasts*

[Peru: Why could gold mining be reducing populations of fish and giant otters in Madre de Dios? \(2021\).](#) *Mongabay Latin America*

[Toilet or dance floor? \(2021\).](#) *Mada Gadol Baktana Popular Science Website*

[These small mammals snort to a different tune \(2020\).](#) *Scientific American short podcast*

[Rock hyrax communication provides hints to the way human languages developed \(2019\).](#) *Ha'aretz newspaper, Israel.*

[Giant otters: victims of illegal Mining in Madre de Dios \(2019\)](#). *Mongabay Latin America*

[Wolves adapt to humans and use roads for movement \(2018\)](#). *Ha'aretz newspaper, Israel*.

[For river otters, social life is shaped by the latrine \(2016\)](#) – *Scientific American*

[A river otter's hot spot? The latrine \(2016\)](#) – *The New York Times*

[Everything you wanted to know about otters \(2015\)](#). *Ha'aretz newspaper, Israel*.

[Hyraxes Sing Better for Attentive Audiences \(2014\)](#). *Wired online magazine*.

[Rock hyraxes also want social equality \(2011\)](#). *Ha'aretz newspaper, Israel*.

[Social network equality helps hyraxes live longer \(2011\)](#). *Wired online magazine*.