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# Desiree K. Bliss (née Andersen)

## Curriculum Vitae

Postdoctoral Researcher  
Combrink Lab, School of Natural Resources and the Environment  
The University of Arizona  
1064 E Lowell St, Tucson, AZ 85721

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I am currently a postdoctoral researcher in the Combrink Lab at the University of Arizona studying zoonotic diseases and the impact of climate change on risks of zoonotic diseases, as modeled by forecasting and spatially-explicit, individual-based simulations.

### Research Interests:

Ecological modeling, habitat suitability and species distribution models, population models, individual-based models, zoonotic disease models, simulation modeling, climate change, animal conservation, conservation management, landscape ecology

### Skills:

- Teaching online and in-person at the university level
- Educational and interorganizational outreach
- Geographic information systems (GIS, ArcGIS software)
- Programming and data science
- Ecological modeling:
  - SDMs/HSMs/ENMs (MaxEnt, R)
  - Connectivity mapping (Linkage Mapper, Circuitscape)
  - Population simulations (HexSim, Vortex)

### Education:

- 2017 – 2021**    **PhD in Ecology (Ecoscience)**  
Ewha Womans University  
Supervised by Professor Yikweon Jang  
Thesis title: *Ecological models to address complex issues of animal conservation*
- 2015 – 2017**    **Master of Environmental Studies (MES)**  
The Evergreen State College  
Thesis title: *Unraveling Korea's Mysterious Ulleung Island: Human Impacts on Forestry Understory of a Temperate Island in the Sea of Japan*
- 2011 – 2014**    **BS in Ecology and Natural History**  
The Evergreen State College

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### Employment:

**2023 – Present Post-Doctoral Researcher in the Combrink Lab**

The University of Arizona, Tucson, AZ

- Conducting zoonotic disease modeling to determine current and future climate change driven risks of mosquito-borne viruses in Coconino County, AZ and the state of Arizona
- Selected for Community Action for Biodiversity Fellowship through the Lovejoy Center
- Mentorship of students and colleagues in ecological niche modeling
- Collaboration with county and state health officials (ADHS) on mosquito control and West Nile Virus mitigation

**2021 – 2023 Post-Doctoral Researcher in the Laboratory of Animal Communications**

Ewha Womans University, Seoul, Republic of Korea

- Conducted research for lab projects focused on invasive species and threatened species habitat and population modeling
- Taught short course on plant identification and ecology

**2017 – 2021 Doctoral Researcher in the Laboratory of Animal Communications**

Ewha Womans University, Seoul, Republic of Korea

- Conducted research for lab projects focused on amphibian conservation, invasive species, and Asiatic black bear reintroduction
- Teaching assistant for animal behavior course
- Taught short course on plant identification and ecology

**Spring 2017 Statistics and GIS Tutor for Stream Ecology Course**

The Evergreen State College, Olympia, WA

- Aided students in course material and independent projects

**Summer 2015 Stream Survey Technician (Intern)**

American Conservation Experience, Corvallis, OR

- Conducted stream surveys in forests of California, Oregon, and Washington
- Navigation, manual and field GIS stream delineation, habitat evaluation

**Summer 2014 Biological Technician (Intern)**

Institute for Applied Ecology, Corvallis, OR

- Conducted rare plant species inventory, invasive species maintenance, data entry, report writing

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### Teaching:

- 2026** **WFSC 140 Spring:** Wildlife at the Movies (instructor of record, UA)  
**RNR 497/597 Spring:** Advanced Topics in Natural Resources Conservation (co-instructor)
- 2025** **WFSC 444 Sum:** Wildlife Ecology, Conservation, and Management (instructor of rec. UA)  
**WFSC 223 Spring:** Dealing with Data in the Wild (instructor of record, UA)
- 2024** **WFSC 385 Fall:** Zoo and Aquarium Conservation (instructor of record, UA)  
**WFSC 447 Summer:** Wildlife Conservation Behavior (instructor of record, UA)  
**CIRTL Postdoc Pathways Program:** Obtained a teaching certification through participation in faculty learning communities and coteaching of WFSC 223 Winter - Dealing With Data in the Wild. Developed course material for a new module on GIS in R.
- 2023** **Guest Lecture for RNR 384 Fall (and Spring 2025) -** Natural Resources Management Practices: Invited lecture on wildlife disease and management.
- 2022** **GIS for Ecology:** Students are introduced to ArcGIS Desktop and how to use the program for ecological data, mapping, and analysis. Students first follow along with an instructor-led example workflow, then complete independent assignments using the same workflow.
- 2021/22** **Field Ecology (Botany):** Led undergraduate students in field identification of plant families and native Korean plant species. Taught students important identifying features of commonly encountered temperate forest plants, including anatomical parts.

### Publications:

- Kim, K., Kim, K., **Bliss, D. A.**, & Jang, Y. (2026). Predictive modeling of animal-vehicle collisions involving the threatened leopard cat (*Prionailurus bengalensis*) and Eurasian otter (*Lutra lutra*), in the Republic of Korea. *Animal Cells and Systems*, 30(1), 183–200.  
<https://doi.org/10.1080/19768354.2026.2620251>
- Russell, M. C., **Bliss, D. A.**, Fischer, G. A., Riehle, M. A., Rappazzo, K. M., Ernst, K. C., Hilborn, E. D., DeFlorio-Barker, S., & Combrink, L. (2025). Evaluating Associations Between Drought and West Nile Virus Epidemics: A Systematic Review. *Microorganisms*, 13(12), 2851.  
<https://doi.org/10.3390/microorganisms13122851>
- Um, T. E., **Bliss, D. A.**<sup>†</sup>, Borzée, A., Jang, Y. (2025). Biogeographic barriers and environmental gradients reveal distribution limits in *Hynobius* salamanders. *Scientific Reports* 15, 38345 (2025). <https://doi.org/10.1038/s41598-025-22226-5>

<sup>†</sup> Indicates mentorship role

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#### Publications (cont.):

- Andersen, D.**, Borzée, Amaël, & Jang, Y. (2025). Ongoing invasions by American bullfrogs and red-eared sliders in the Republic of Korea. *Animal Cells and Systems*, 29(1), 113–121. <https://doi.org/10.1080/19768354.2025.2455080>
- Borzée, A., Jang, Y., Othman, S. N., Groffen, J., Maslova, I. V., Purevdorj, Z., Yasumiba, K., Shimada, T., Yi, Y., Schepina, N. A., **Andersen, D.**, Bae, Y., Miura, I., & Dufresnes, C. (2025). Integrating phylogeographic and phenotypic evidence to delimit deep evolutionary lineages in the Dryophytes japonicus species complex, with an assessment of their conservation needs. *Herpetozoa*, 38, 25–42. <https://doi.org/10.3897/herpetozoa.38.e137747>
- Payne, N., **Andersen, D.**, Mollohan, C., Van Doorslaer, K., Combrink, L., & Culver, M. (2025). Urbanisation and Host Relatedness Shape Virome Composition in a Widespread, Generalist Carnivore. *Molecular Ecology*, 34(6), e17681. <https://doi.org/10.1111/mec.17681>
- Payne, N., **Andersen, D.**, Davis, R., Mollohan, C., Baldwin, K., LeCount, A. L., & Culver, M. (2024). Evidence of extensive home range sharing among mother–daughter bobcat pairs in the wildland–urban interface of the Tucson Mountains. *Journal of Heredity*, esae072. <https://doi.org/10.1093/jhered/esae072>
- Andersen, D. K.**, Borzée, A., & Jang, Y. (2024). A slippery slope: Assessing the amphibian extinction crisis through the lens of climate refugia (p. 2024.09.25.615003). *bioRxiv*. <https://doi.org/10.1101/2024.09.25.615003>
- Andersen, D. K.**, Fischer, G. A., & Combrink, L. (2024). The alligator and the mosquito: North American crocodylians as amplifiers of West Nile Virus in changing climates. *Microorganisms*, 12(9), 1898. <https://doi.org/10.3390/microorganisms12091898>
- Andersen, D.**, Jang, Y., & Borzée, A. (2023). Influence of landscape and connectivity on anuran conservation: Population viability analyses to designate protected areas. *Animal Conservation*, 26(3), 381–397. <https://doi.org/10.1111/acv.12829>
- Kim, K., **Andersen, D.**, & Jang, Y. (2023). Predictive Modeling of Ungulate–Vehicle Collision in the Republic of Korea. *Biology*, 12(8):1068. <https://doi.org/10.3390/biology12081068>
- Andersen, D.**, Litvinchuk, S. N., Jang, H. J., Jiang, J., Koo, K. S., Maslova, I., Kim, D., Jang, Y., & Borzée, A. (2022). Incorporation of latitude-adjusted bioclimatic variables increases accuracy in species distribution models. *Ecological Modelling*, 469, 109986. <https://doi.org/10.1016/j.ecolmodel.2022.109986>
- Groffen, J., **Andersen, D.**, & Borzée, A. (2022). Breeding phenology and landscape use in all amphibian species from the Republic of Korea based on open-source data. *Frontiers in Environmental Science*, 10, 1641. <https://doi.org/10.3389/fenvs.2022.846481>

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#### Publications (cont.):

- Serret, H., **Andersen, D.**, Deguines, N., Clauzel, C., Park, W. H., & Jang, Y. (2022). Towards Ecological Management and Sustainable Urban Planning in Seoul, South Korea: Mapping Wild Pollinator Habitat Preferences and Corridors Using Citizen Science Data. *Animals*, 12(11), 1469. <https://doi.org/10.3390/ani12111469>
- Chuang, M. F., Cheng, Y. J., **Andersen, D.**, Borzée, A., Wu, C. S., Chang, Y. M., ... & Kam, Y. C. (2022). Increasing salinity stress decreases the thermal tolerance of amphibian tadpoles in coastal areas of Taiwan. *Scientific Reports*, 12(1), 1-11. <https://doi.org/10.1038/s41598-022-12837-7>
- Ambu, J., **Andersen, D.**<sup>†</sup>, & Borzée, A. (2022). Spawning site selection and segregation at the landscape, habitat and microhabitat scales for five syntopic Asian amphibians, *Amphibia-Reptilia* (published online ahead of print 2022). <https://doi.org/10.1163/15685381-bja10090>
- Andersen D.**, Chuang M. F., Choe M., Kim A., Kwon S., Jang Y., Borzée A. (2022). Elevational distribution of amphibians: resolving distributions, patterns, and species communities in the Republic of Korea. *Zool Stud* 61:25. ([link](#))
- Andersen, D.**, Maslova, I., Purevdorj, Z., Li, J.-T., Messenger, K. R., Ren, J.-L., Jang, Y., & Borzée, A. (2022). East palearctic treefrog past and present habitat suitability using ecological niche models. *PeerJ*. <https://doi.org/10.7717/peerj.12999>
- Othman, S. N., Litvinchuk, S. N., Maslova, I., Dahn, H., Messenger, K. R., **Andersen, D.**, Jowers, M. J., Kojima, Y., Skorinov, D. V., Yasumiba, K., Chuang, M.-F., Chen, Y.-H., Bae, Y., Hoti, J., Jang, Y., & Borzée, A. (2022). From Gondwana to the Yellow Sea, evolutionary diversifications of true toads Bufo sp. In the Eastern Palearctic and a revisit of species boundaries for Asian lineages. *ELife*, 11, e70494. <https://doi.org/10.7554/eLife.70494>
- Andersen, D.**, & Jang, Y. (2021). Biodiversity and Transportation Infrastructure in the Republic of Korea: A Review on Impacts and Mitigation in Developing the Country. *Diversity*, 13(11), 519. <https://doi.org/10.3390/d13110519>
- Borzée, A., Litvinchuk, S. N., Ri, K., **Andersen, D.**, Nam, T. Y., Jon, G. H., ... & Jang, Y. (2021). Update on distribution and conservation status of amphibians in the Democratic People's Republic of Korea: Conclusions based on field surveys, environmental modelling, molecular analyses and call properties. *Animals*, 11(7), 2057. <https://doi.org/10.3390/ani11072057>
- Andersen, D.**, Yi, Y., Borzée, A., Kim, K., Moon, K.-S., Kim, J.-J., Kim, T.-W., & Jang, Y. (2021). Use of a spatially explicit individual-based model to predict population trajectories and habitat connectivity for a reintroduced ursid. *Oryx*, 1-10. <https://doi.org/10.1017/S0030605320000447>

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#### Publications (cont.):

- Andersen, D.**, Borzée, A., & Jang, Y. (2021). Predicting global climatic suitability for the four most invasive anuran species using ecological niche factor analysis. *Global Ecology and Conservation*, 25, e01433. <https://doi.org/10.1016/j.gecco.2020.e01433>
- Messenger, K. R., Dahn, H., **Andersen, D.**, Shin, Y., Bae, Y. H., & Borzée, A. (2020). *Bufo stejnegeri* (Korean Water Toad). Geographical distribution. *Herpetological Review*, 51(3), 532. ([link](#))
- Othman, S. N., Chen, Y.-H., Chuang, M.-F., **Andersen, D.**, Jang, Y., & Borzée, A. (2020). Impact of the Mid-Pleistocene Revolution and Anthropogenic Factors on the Dispersion of Asian Black-Spined Toads (*Duttaphrynus melanostictus*). *Animals*, 10(7), 1157. <https://doi.org/10.3390/ani10071157>
- Borzée, A., Messenger, K. R., Chae, S., **Andersen, D.**, Groffen, J., Kim, Y. I., An, J., Othman, S. N., Ri, K., & Nam, T. Y. (2020). Yellow sea mediated segregation between North East Asian Dryophytes species. *PloS One*, 15(6), e0234299. <https://doi.org/10.1371/journal.pone.0234299>
- Kim, K., Serret, H., Clauzel, C., **Andersen, D.**<sup>†</sup>, & Jang, Y. (2019). Spatio-temporal characteristics and predictions of the endangered leopard cat *Prionailurus bengalensis euptilura* road-kills in the Republic of Korea. *Global Ecology and Conservation*, 19, e00673. <https://doi.org/10.1016/j.gecco.2019.e00673>
- Borzée, A., Yi, Y., **Andersen, D.**, Kim, K., Moon, K.-S., Kim, J.-J., Kim, T.-W., & Jang, Y. (2019). First dispersal event of a reintroduced Asiatic black bear (*Ursus thibetanus*) in Korea. *Russian Journal of Theriology*, 18(18 (1)). <https://doi.org/10.15298/rusjtheriol.18.1.06>
- Borzée, A., **Andersen, D.**, Groffen, J., Kim, H.-T., Bae, Y., & Jang, Y. (2019). Climate change-based models predict range shifts in the distribution of the only Asian plethodontid salamander: *Karsenia koreana*. *Scientific Reports*, 9(1), 1–9. <https://doi.org/10.1038/s41598-019-48310-1>
- Andersen, D.** (2019). Secondary human impacts on the forest understory of Ulleung Island, South Korea, a temperate island. *Journal of Ecology and Environment*, 43(1), 20.
- Borzée, A., **Andersen, D.**, & Jang, Y. (2018). Population trend inferred from aural surveys for calling anurans in Korea. *PeerJ*, 6, e5568.
- Andersen, D.** (2015). *Nature Guide to Ulleungdo*. CreateSpace Independent Publishing Platform.

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### Conference Presentations:

- Bliss, D.,** Fischer, G., & Combrink, L. (2026, February). *Climate change and extreme weather events to intensify West Nile virus activity*. 2026 Joint Annual Meeting (JAM) of the New Mexico Chapter of The Wildlife Society and the Arizona Chapter of The Wildlife Society, Sedona, Arizona.
- Andersen, D.,** Fischer, G., & Combrink, L. (2024, November). *Predictive Modeling of Mosquito Abundance and West Nile Virus Transmission Dynamics: Insights from a Decade of Surveillance in Arizona*. Entomology 2024, Phoenix, Arizona.
- Andersen, D.,** Fischer, G., & Combrink, L. (2024, October). *Predictive Modeling of Mosquito Abundance and West Nile Virus Transmission Dynamics: Insights from a Decade of Surveillance in Arizona*. The Wildlife Society's 31st Annual Conference, Baltimore, Maryland.
- Andersen, D.,** Borzée, A., & Jang, Y. (2023, July). *A slippery slope: assessing the amphibian extinction crisis through the lens of climate refugia*. 10th EAFES (East Asian Federation of Ecological Societies) International Congress, Jeju, Republic of Korea.
- Andersen, D.,** Jang, Y., & Borzée, A. (2021, December). *Can Dryophytes flaviventris survive without protected areas?* 2021 Korea Ecological and Environmental Sciences Association Conference, Seoul, Republic of Korea.
- Andersen, D.,** Borzée, A., Purevdorj, Z., Messenger, K. R., Ren, J., Maslova, I., Li, J.-T., & Jang, Y. (2020, January). *Present and recent past habitat suitability ranges of Northeast Asian treefrogs using maximum entropy models*. 9th World Congress of Herpetology, Dunedin, New Zealand.
- Andersen, D.,** Borzée, A., & Jang, Y. (2019, July). *Habitat suitability overlap of two threatened frog species in the Korean Peninsula*. 29th International Congress for Conservation Biology, Kuala Lumpur, Malaysia.
- Andersen, D.,** & Jang, Y. (2018, September). *A mixed model approach to modelling global habitat suitability and invasion risk of the American bullfrog*. 10th International Conference on Ecological Informatics, Jena, Germany.
- Andersen, D.,** & Jang, Y. (2018, September). *Methods for modelling invasive species at local and global scales*. Annual International Symposium of Institute of Forest Science, Chuncheon, Republic of Korea.

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#### Conference Presentations (cont.):

- Andersen, D., & Jang, Y.** (2018, August). *Development of regional climate envelopes for the American bullfrog and red-eared slider for population regulation in South Korea*. The Fifth Regional Meeting of the Society for Conservation Biology Asia Section, Bishkek, Kyrgyzstan.
- Andersen, D., Yi, Y., Borzée, A., Kim, K., & Jang, Y.** (2018, August). *Modelling of a reintroduced Asiatic Black Bear population in South Korea with recommendations for future conservation*. The Fifth Regional Meeting of the Society for Conservation Biology Asia Section, Bishkek, Kyrgyzstan.
- Andersen, D., Borzée, A., Groffen, J., & Jang, Y.** (2018, April). *Predicted Range of the Korean Crevice Salamander, *Karsenia koreana*, and Projected Range Shift for Four Climate Change Scenarios*. 8th EAFES (East Asian Federation of Ecological Societies) International Congress, Nagoya City, Japan.
- Andersen, D., & Jang, Y.** (2018, February). *Use of Empirical Bayesian Kriging Regression Prediction to map canopy composition on Ulleung Island, Republic of Korea*. Korean Council of Ecological and Environmental Sciences Conference, Chonnam National University, Republic of Korea.
- Andersen, D., Yi, Y., Borzée, A., & Jang, Y.** (2017, September). *Estimating carrying capacity using range overlap of reintroduced Asiatic Black Bears in Jirisan National Park, Republic of Korea*. The International Society for Ecological Modelling Global Conference, Jeju, Rep. of Korea.
- Andersen, D., Borzée, A., Groffen, J., & Jang, Y.** (2017, August). *Impacts of Climate Change on the Range of the Korean Crevice Salamander*. The 72nd Annual Meeting of The Korean Association of Biological Sciences, Seoul, Republic of Korea.

#### Invited Talks:

Women in Data Science Tucson 2025 - March 28, 2025  
2025 Arizona Vector Conference - April 14, 2025

#### Awards and Grants:

Recipient of the University of Arizona One Health Research Initiative Postdoc Fellowship  
NSF EAPSI Fellowship (grant #1613885) – June-August 2016  
“Assessing Effects of Urban Proximity on Plant Communities in an Island Ecosystem”

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**Other:**

Attendee at InvaCost II Workshop, Marrakech, Morocco, November 2022

Reviewer for international journals including: *Science of the Total Environment*, *Biological Conservation*, *Pest Management Science*, *Scientific Reports*, *Agriculture*, *Insects*, *PLOS One*, *Animal Conservation*, *Biological Invasions*, *Ecological Modelling*