

NATALIE J. FORSDICK

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RESEARCH INTERESTS

I specialise in using genomic data to inform threatened species management strategies working alongside conservation practitioners and Indigenous communities, including through sequencing, assembly and analysis of complex whole-genomes and population genomic data.

RESEARCH POSITIONS

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| 2020–NOW | Postdoctoral Research Fellow , Systematics, Manaaki Whenua Landcare Research. Research projects undertaken in association with Genomics Aotearoa include: genome sequencing and assembly for a diverse range of endemic New Zealand taxa, population genomic analysis, and comparative evolutionary analysis. Primary supervisor: Prof. Thomas Buckley. |
| 2020 | Postdoctoral Research Assistant , School of Biological Sciences, University of Canterbury. Activities included: high-quality genomic DNA extraction from plant material, conservation genetic lab work for the Department of Conservation's Kākī Recovery Programme, leading a team of predominantly early-career researchers to provide a review of conservation genetic and genomic tools contracted by the Department of Conservation, and producing a data management plan for a genomic lab group. Primary supervisors: Assoc. Prof. Pieter Pelser and Assoc. Prof. Tammy Steeves. |

EDUCATION

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| 2020 | PhD, Genomics Department of Anatomy, University of Otago Supervisors: Assoc. Prof. Michael Knapp and Assoc. Prof. Tammy Steeves Thesis: <i>Assessment of the impacts of anthropogenic hybridisation in a threatened non-model bird species through the development of genomic resources with implications for conservation.</i> |
| 2016 | MSc (First Class Honours), Biological Sciences School of Biological Sciences, University of Canterbury Supervisors: Dr Marie Hale and Dr Melanie Massaro Thesis: <i>Genetic diversity within and among populations of black robins on the Chatham Islands.</i> |
| 2010 | BSc, Biological Sciences University of Canterbury |

PUBLICATIONS

Peer-reviewed

- 2022 **Forsdick NJ**, Adams CIM, Alexander A, Clark AC, Collier-Robinson L, Cubrinovska I, Croll Dowgray M, Dowle EJ, Duntsch L, Galla SJ, Howell L, Magid M, Rayne A, Verry AJF, Wold JR, Steeves TE. Current applications and future promise of genetic/genomic data for conservation in an Aotearoa New Zealand context. *Science for Conservation* 337. Department of Conservation, Wellington. 57 p. <https://www.doc.govt.nz/globalassets/documents/science-and-technical/sfc337entire.pdf>
- 2021 **Forsdick NJ**, Martini D, Brown L, Maloney RJ, Steeves TE, Knapp M. Genomic sequencing confirms absence of introgression despite past hybridisation between a common and a critically endangered bird. *Global Ecology and Conservation*. DOI: [10.1016/j.gecco.2021.e01681](https://doi.org/10.1016/j.gecco.2021.e01681).
- 2021 **Forsdick NJ**, Cubrinovska I, Massaro M, Hale ML. Microsatellite genotyping detects extra-pair paternity in the Chatham Island black robin, a highly inbred, socially monogamous passerine. *Emu – Austral Ornithology*. DOI: [10.1080/01584197.2020.1812406](https://doi.org/10.1080/01584197.2020.1812406).
- 2020 Jarvis RM, Borrelle SB, **Forsdick NJ**, Pérez-Hammerle KV, Dubois NS, Griffin S, Recalde-Salas A, Buschke F, Rose DC, Archibald CL, Gallo J, Mair L, Kadykalo AN, Shanahan D, Prohaska BK. Navigating spaces between conservation research and practice: are we making progress? *Ecological Solutions and Evidence* 1:e12028. DOI: [10.1002/2688-8319.12028](https://doi.org/10.1002/2688-8319.12028).
- 2018 Galla SJ*, **Forsdick NJ***, Brown L, Hoepfner MP, Knapp M, Maloney RF, Moraga R, Santure AW, Steeves TE. Reference genomes from distantly related species can be used for discovery of single nucleotide polymorphisms to inform conservation management. *Genes* 10: 1. DOI: [10.3390/genes10010009](https://doi.org/10.3390/genes10010009). Awarded Best Student Paper, Society for Conservation Biology Oceania 2019. *Co-first authors.
- 2017 **Forsdick NJ**, Cubrinovska I, Massaro M, & Hale ML. Genetic diversity and population differentiation within and between island populations of two sympatric *Petroica* robins, the Chatham Island black robin and tomtit. *Conservation Genetics* 18: 275-285. DOI: [10.1007/s10592-016-0899-1](https://doi.org/10.1007/s10592-016-0899-1).
- 2016 Almojil D, Arias MC, Beasley RR, Chen Y, Clark RW, Dong Y, Dong Z, **Forsdick NJ**, et al. Microsatellite records for volume 8, issue 2. *Conservation Genetics Resources* 8: 169-196. DOI: [10.1007/s12686-016-0549-4](https://doi.org/10.1007/s12686-016-0549-4)

Other

- 2022 Miskelly CM, **Forsdick NJ**, Gill BJ, Palma RL, Rawlence NJ, Tennyson AJD. [Amendments to the 2010 Checklist of the birds of New Zealand](#). *Ornithological Society of New Zealand Occasional Publication* No. 2. Wellington: Ornithological Society of New Zealand.
- 2022 **Forsdick NJ**, Magid M, Rayne A, Steeves TE. [Navigating the shifting landscape of genetics/genomics research to support conservation management in Aotearoa New Zealand](#). New Zealand Ecological Society *Hot Topic* report.
- 2021 **Forsdick, NJ**. Reducing the mismatches between conservation research and practice. In *Pūtaiao - Manaaki Whenua science summary* (Vol. 6, pp. 18). Lincoln, NZ: Manaaki Whenua.
- 2018 Galla SJ, **Forsdick NJ**. [Novel science communication sees Bird of the Year take on Tinder](#). Sciblogs article.
- 2017 **Forsdick NJ** & Kelly M. [Kākī reared and sampled](#). *Junctures* 18: 58-64.
- 2017 Wilkinson M & **Forsdick NJ**. [A conglomeration of stilts](#). *Junctures* 18: 35-40.

SELECTED PRESENTATIONS

Oral Presentations (invited presentations in bold)

- 2022 **Hybridisation and values-based conservation**. ESA-SCBO conference Postgraduate Day, Wollongong, Australia.

- 2022 Rapid genomic sequencing advancements facilitate high-quality genome assembly in a diverse array of endemic Aotearoa New Zealand species. ESA-SCBO conference, Wollongong, Australia.
- 2022 Rapid genomic sequencing advancements facilitate high-quality genome assembly for larger genomes of endemic Aotearoa New Zealand species. Biodiversity Genomics virtual conference.
- 2022 **Huhu beetle genomics**. Oxford Nanopore Technologies ‘Pores and Pours’ meeting, Christchurch, New Zealand.
- 2021 **Developing genomic tools for conservation of critically endangered kakī**. School of Biological Sciences seminar series, University of Auckland, New Zealand.
- 2021 **Using genomic tools for conservation of critically endangered kakī**. Birds New Zealand Auckland branch indoor meeting, Auckland, New Zealand.
- 2020 **Twitter conferencing 101**. ‘Attending Remote Conferences’ workshop, Otago Postgraduate Association, University of Otago, Dunedin, New Zealand.
- 2020 Making great presentations. BIOA401 Advanced Biological Anthropology seminar, Department of Anatomy, University of Otago.
- 2019 Unorthodox social media for conservation awareness. Conservation Communicators Hui, Dunedin, New Zealand.
- 2019 Minimal genomic impact of hybridisation in one of the world’s rarest wading birds, kakī/black stilt. International Congress for Conservation Biology, Kuala Lumpur, Malaysia.
- 2018 **Unpacking the conservation toolbox for kakī (black stilts)**. Department of Anatomy seminar series, University of Otago, Dunedin, New Zealand.
- 2018 **Wading into genomics for threatened species recovery**. Birds New Zealand Otago regional meeting, Dunedin, New Zealand.
- 2018 An update on captive breeding success for kakī. Conservation Communicators Hui, Wellington, New Zealand.
- 2018 Using genomic tools to evaluate the risk hybridisation poses to kakī. Society for Conservation Oceania conference, Wellington, New Zealand.
- 2018 Wading into genomics for threatened species recovery. Birds New Zealand conference, Waitangi, New Zealand.
- 2018, 2019, 2020 **Hybridisation genomics of kakī**. Kakī Recovery Group Meeting, Twizel, New Zealand.
- 2017 Kakī conservation at the cutting edge: Using genomics to investigate hybridisation in New Zealand’s rarest wader. Australasian Ornithological Conference, Geelong, Australia.
- 2017 Wading into conservation genomics for kakī. MapNet Conference, Palmerston North.
- 2017 Using historic samples to inform current conservation management of kakī. Conference of Australasian Vertebrate Evolution, Palaeontology, and Systematics, Queenstown, New Zealand.
- 2017 Genomic analysis of kakī. Braided River Aid Symposium, Lincoln, New Zealand.
- 2017 Robin Recovery: Genetic diversity of the Chatham Island black robin. (**Best Student Presentation Award**) Birds New Zealand conference, Te Anau, New Zealand.
- 2016 **Conservation genetics of the Chatham Island black robin**. Heritage Expeditions ‘Birding Down Under’ Subantarctic on-board seminar.

Poster Presentations

- 2019 [My year with Orbell - From monstrosity to science communication queen](#). International Congress for Conservation Biology, Kuala Lumpur, Malaysia.

- 2018 Wading into conservation genomics for kakī. New Zealand Molecular Ecology Conference, Tautuku, New Zealand.
- 2018 Genomic analysis of hybridisation between kakī and poaka. Genetics Society of Australasia Conference, Dunedin, New Zealand.

Other

- 2021 [Chatham Island Black Robin](#). Women Birders (Happy Hour) podcast interview with Hannah Buschert.
- 2017 **Forsdick NJ**. [Wading into conservation genomics for kakī](#). British Ornithological Union 2017 Twitter Conference (#BOU17TC) presentation.
- 2017 [Avian promiscuity](#). Otago Access Radio ‘Science Notes’ interview.

SCHOLARSHIPS, GRANTS, AND AWARDS

- 2020 Postgraduate Publishing Bursary (Doctoral).
- 2019 Society for Conservation Biology Oceania Best Student Paper Award 2019. Galla, Forsdick *et al.*, 2018.
- 2019 University of Otago Department of Anatomy Student Travel Award.
- 2017 Birds New Zealand Research Fund grant.
- 2017 Birds New Zealand Student Travel Award.
- 2017 University of Otago Department of Anatomy Student Travel Award.
- 2017 Birds New Zealand Conference: Best Student Presentation Award.
- 2017 Birds New Zealand Student Travel Award:
- 2016 Enderby Trust Scholarship.
- 2016 University of Otago Doctoral Scholarship.

SELECTED SERVICE ACTIVITIES

Birds New Zealand

- 2021–now Birds New Zealand Vice-President.
- 2021 Australasian Ornithological Conference 2022 abstract reviewer.
- 2021–2022 New Zealand Bird Checklist Committee member for the *The Checklist of the Birds of New Zealand, 5th Edition*.
- 2021, 2022 Poster and oral presentation judge, Birds NZ conference.
- 2018–now Society council member.
- 2019–now Twitter administrator and content creator.
- 2017–2019 Developed the society mascot (Orbell the takahē) as an outreach tool and created resources to promote the society via social media.
- 2017 Judge, Dunedin high schools’ Science Fair projects relating to birds (2017)
- 2017–now Member.

Genomics Aotearoa

2022 Genomics Aotearoa Postdoctoral Researchers Group co-chair.

Manaaki Whenua – Landcare Research

2022–2023 eResearch NZ 2023 conference programme committee.

2022–now MWLR Early Career Researcher Group co-lead and representative to the pan-CRI ECR group under Science New Zealand.

2022 Judge, NIWA Auckland Science and Technology Fair.

Society for Conservation Biology (SCBO)

2022–now Secretary, SCBO.

2022 Session chair, ESA-SCBO conference.

2022 Student poster judge, ESA-SCBO conference.

2021–now Board member, Society for Conservation Biology Oceania.

2021–now Diversity, Equity, Inclusion, and Justice committee Oceania section representative.

2019 Conference volunteer, International Congress for Conservation Biology, Kuala Lumpur, Malaysia.

2017–now Member, Oceania region.

University of Canterbury

2020 Judge, Three Minute Thesis competition, School of Biological Sciences.

2016 Organising committee member, Braided River Awareness and Fundraising Art Auction, Nut Point Centre, Christchurch. All funds raised supported kākī conservation.

University of Otago

2018–2019 PhD student convenor, Emerging Researchers Group, Department of Anatomy.

2028–2019 PhD student representative, Outreach and Engagement Committee, Department of Anatomy.

2017, 2018 Laboratory demonstrator, bioanthropology workshops during ‘Hands On @ Otago’ university open days.

2017 Member, Postgraduate Student Research Symposium planning committee and programme sub-committee.

Peer review

2022–now Editorial Board, New Zealand Journal of Ecology.

2022 In 2022 journals included: *BMC Biology* (3), *Conservation Science and Practice* (2), *Ecosystem Health and Sustainability*, *Evolutionary Applications* (3), *Ibis* (3), *Molecular Ecology*, *PLoS ONE* (2, including 1 as Guest Academic Editor).

2017–2021 *Evolutionary Applications*, *Biological Invasions*, *Ecology and Evolution*, *Emu – Austral Ornithology*, *Genes*, *Ibis*, *Journal of Ornithology*, *Landscape Ecology*, *Molecular Biology Reports*, *Molecular Ecology Resources*, *Notornis*, *Polar Biology*.

TEACHING AND MENTORING EXPERIENCE

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| 2022 | <p>Mentor, Poipoia Kia Rere – Māori Internship Programme, Manaaki Whenua — Landcare Research.</p> <p>Responsibilities included mentoring and training an undergraduate student in developing genomics laboratory, bioinformatics, and research skills during the summer term.</p> |
| 2022 | <p>Content developer and instructor, Otago Bioinformatics Spring School workshops, University of Otago.</p> <p>Developed training materials, including exemplar code, for a genome assembly workshop, and was lead instructor for this workshop. Also assisted with other workshop days.</p> |
| 2021–2022 | <p>Assistant instructor, bioinformatics training programmes, NeSI/Genomics Aotearoa.</p> <p>Supporting the lead instructor through one-on-one instruction and troubleshooting with learners, answering questions, and leading small group discussions. Workshops included: Genomics Data Carpentry, RNA-seq Data Analysis, R for Genomics.</p> |
| 2021 | <p>The Carpentries instructor training, bioinformatics instructor training programme.</p> <p>Completed training to develop instructor skills when leading or assisting with bioinformatics workshops. Qualified to teach the core curriculum of Data Carpentry, Library Carpentry, and Software Carpentry.</p> |
| 2022 | <p>Laboratory demonstrator (teaching assistant), University of Otago.</p> <p>Responsibilities included leading class discussions, facilitating small group discussions, providing direction for students, answering questions, acting as project manager, and providing enthusiasm and encouragement for 100- and 200-level courses including: Cell and Molecular Biology (CELS191), Animal Biology (BIOL112), Animal Designs for Living (ZOOL221), Evolutionary Biology (ZOOL222).</p> |
| 2022 | <p>Assistant English Teacher, Japan Exchange and Teaching Programme, Daini Junior High School, Tatebayashi-shi, Gunma-ken, Japan.</p> <p>Responsibilities included team-teaching in a junior high school setting, lesson and activity planning, one-on-one speaking practice with students, cultural presentations, marking assignments and exams, and visiting local preschools to provide foreign engagement.</p> |

OUTREACH AND OTHER ACTIVITIES

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| 2021–2022 | Assisted as a guide at seasonal Birds NZ guided bird walks at Ambury Regional Park. |
| 2021–2022 | Completed Kete 1 (Te Tūāpapa) and Kete 3 (Tāhuhu) in <i>Te Ao Māori for Professionals</i> Education Perfect online course. |
| 2017–2020 | Assisted with DOC Kakī Recovery Programme annual release days in Twizel, involving netting and weighing birds at the captive breeding centre, and releasing birds into the wild. |
| 2019 | Completed He Papa Tikanga: Certificate in Tikanga Māori level 3, Te Wānanga o Aotearoa. |
| 2017, 2018 | Co-developer of the New Zealand Bird of the Year social media campaign for kakī, using mixed media across social media platforms, with kakī achieving third place in 2018. |
| 2017 | Participant in the University of Otago and Otago Polytechnic Art + Genetics multidisciplinary project, collaborating with New Zealand artists to produce three artworks inspired by kakī genetic and genomic research. Art was on public display in Dunedin during the Genetics Society of Australasia conference, with supporting information published in <i>Junctures</i> . |
| 2016–2019 | Visitor Welcome Volunteer, Orokonui Ecosanctuary, Dunedin. Educating the public about local biodiversity and birdlife in the sanctuary. |

2014 Completed Japanese Language Proficiency Test N3: The ability to understand Japanese used in everyday situations.

REFERENCES

Available on request.