THE ZSL WILD SCIENCE PODCAST: SHOW NOTES

Episode: ZSL #050 – Mapping Nature's Code

How does our DNA, the tiny building blocks that make every species, and every individual, totally distinct, impact our evolution? In this episode, we learn how we can visualise our DNA, or genome, to allow us to better organise the tree of life, and how learning more about this genetic make-up can provide insights into how a species survives in the face of a changing environment. We head to Cambridge, to ring native UK birds and collect samples of their DNA, and then to the Wellcome Sanger Institute, to see learn how those samples are processed and sequenced as part of a collaborative project aiming to sequence the genomes of all eukaryotes in Britain and Ireland; the Darwin Tree of Life project.

Overview

00:13 Harriet McAra, Host of Wild Science, Episode introduction

01:05 Bird ringing in Cambridgeshire and Dr Ava Jenkins, Wildlife Veterinarian and Postdoctoral Research Associate, ZSL Institute of Zoology

06:57 Professor Mark Blaxter, Head of the Tree of Life Programme, Wellcome Sanger Institute

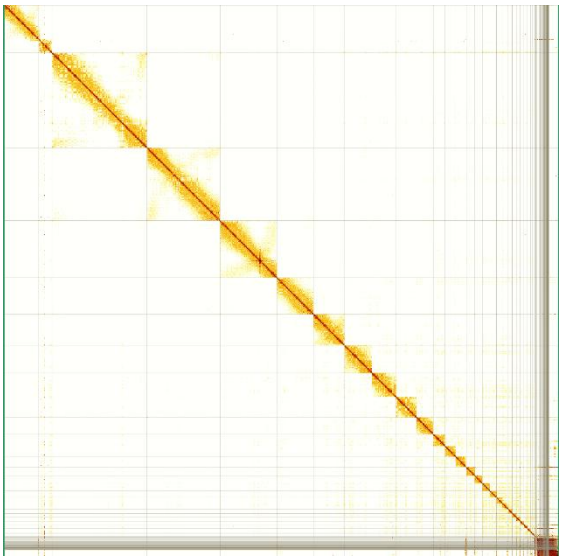
20:16 Dr Tom Mathers, Senior Computer Biologist, Wellcome Sanger Institute

37:18 A word of thanks

37:36 A final thought from Mark Blaxter

39:22 Outro

Hi-C contact map of the common crane (*Grus grus*)



Hi-C contact map showing the common crane genome (https://wellcomeopenresearch.org/articles/10-119/v1) after manual curation. Each block represents a chromosome in order of size from left to right and top to bottom, with dark red cluster in the bottom right hand corner showing unplaced repetitive content.

Resources

- If there's a topic you'd like to hear on a future podcast, or if you'd like to share your thoughts, email the ZSL Wild Science Podcast at: wild.science@zsl.org
- Check out our science and conservation work at: www.zsl.org/Science or www.zsl.org/conservation
- Darwin Tree of Life project: https://www.zsl.org/what-we-do/projects/darwin-tree-life-project
- Dr Ava Jenkins: https://www.zsl.org/about-zsl/our-people/dr-ava-jenkins
- BTO ringing scheme: https://www.bto.org/get-involved/volunteer/projects/bird-ringing-scheme
- Bortoluzzi, C., Wright, C.J., Lee, S., Cousins, T., Genez, T.A.L., Thybert, D., Martin, F.J., Haggerty, L., The Darwin Tree of Life Project Consortium, Blaxter, M., Durbin, R. (2023) Lepidoptera genomics based on 88 chromosomal reference sequences informs population genetic parameters for conservation. Pre-print: https://www.biorxiv.org/content/10.1101/2023.04.14.536868v1.full.pdf

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