

**Stanford University and PDC
Announce
the
de novo Assembly
of the
African Wild Dog Genome**

Cost-effective Assembly Represents an Important Conservation Milestone

PALO ALTO, CALIFORNIA—JANUARY 2017—The genome of the endangered African wild dog has been assembled *de novo* for the first time. An ongoing collaboration between the Program for Conservation Genomics at Stanford University (led by Prof. Dmitri Petrov), and Painted Dog Conservation (PDC), Zimbabwe (led by Peter Blinston) successfully assembled the whole genomes of two African wild dog (*Lycyaon pictus*) sisters from a dog pack studied by PDC in Hwange National Park. A third genome was assembled for an individual from the Endangered Wolf Center in Eureka, MO, provided by the Saint Louis Zoo. Sequencing libraries were prepared using the 10x Genomics Chromium system, sequenced on Illumina sequencers, and then assembled using 10x Genomics SuperNova assembler.

Dr. Ryan Taylor (Stanford University Program for Conservation Genomics and the CEO of End2End Genomics), who led the team assembling the wild dog genome, said that “The 10x Genomics Chromium system and SuperNova assembler have produced assemblies with continuity well beyond our expectations, which will allow us to perform in depth genetic analyses. This shows that 10x Genomics methodology is a game changer for *de novo* sequencing of large mammalian genomes at very low cost.”

Peter Blinston, remarked that “PDC wishes to acknowledge and thank the Research Council of Zimbabwe and the Zimbabwe Parks and Wildlife Management Authority for their support of this ground breaking work. PDC has been eager to engage in such a high level scientific collaboration for many years and we are delighted with how well the work is progressing. We believe that understanding the genetic makeup of the African wild dogs will contribute to their conservation and management over time.”

Prof. Claudio Sillero, Chair of the IUCN Canid Specialist Group and Scientific Advisor to PDC said “Increasingly we are relying on genomic information for conservation management of wild canids, but genetic studies have until recently been restricted to research rather than field conservation. I can see a new paradigm of field conservation management, using state of the art sequencing technologies, which significantly reduce the cost of genetic screening, to address important management questions on endangered species, including, but not restricted to, assessing population sizes, population diversity, genetic flow between populations and hybridization.”

Dr. Cheryl Asa (Saint Louis Zoo) said “African wild dogs have been shown to have the highest rate of uterine disease of any wild canid species, which affects their fertility and thus the success of conservation breeding programs. A high quality reference genome will be an important tool for

determining whether there is a genetic component to this propensity would help focus research and treatment of this problem.”

About Painted Dog Conservation

Painted Dog Conservation is a leading model for conservation. Painted dogs (*Lycaon pictus*), also called African wild dogs, are being driven towards extinction by the loss of quality habitat and poaching. Our vision is to create an environment where the painted dogs can thrive and our mission is to protect and increase the range and numbers of painted dogs in Zimbabwe through robust research, direct action strategies and our Education & Development Program. PDC believes that conservation needs to deliver tangible benefits to local communities that share their daily lives with the wildlife. Such benefits bring necessary behavioral change that leads to the desired environment where the painted dogs and all wildlife can thrive. For more information, visit painteddog.org

About The Program for Conservation Genomics

The Program for Conservation Genomics (PCG) at Stanford University is a part of the Stanford Center of Computational, Evolutionary, and Human Genomics. It was established through the founding gift by Dr. John Stuelpnagel (Chairman, 10x Genomics), who also initiated the collaboration between Stanford and Painted Dog Conservation. PCG develops and implements cutting-edge genomic tools for a wide range of problems in conservation science and management. For more information, visit pcg.stanford.edu

About IUCN Canid Specialist Group

Based at the Wildlife Conservation Research Unit (WildCRU), at the University of Oxford's Department of Zoology, the IUCN Canid Specialist Group (CSG) is the world's chief body of scientific and practical expertise on the status and conservation of all canid species. The CSG is part of the Species Survival Commission of IUCN, the International Union for the Conservation of Nature. For more information, visit canids.org and wildcru.org

About the Saint Louis Zoo

Chosen as America's top free attraction by USA Today's 10 Best, the Saint Louis Zoo is widely recognized for its innovative approaches to animal management, wildlife conservation, research and education. One of the few free zoos in the nation, the zoo attracts more than 3,000,000 visitors a year. For more information, visit stlzoo.org.

About the Endangered Wolf Center

The Endangered Wolf Center's mission is to preserve and protect Mexican wolves, red wolves and other wild canid species, with purpose and passion, through carefully managed breeding, reintroduction and inspiring education programs. The Center, founded in 1971 by Dr. Marlin Perkins and Carol Perkins, is certified by the Association of Zoos and Aquariums. It is located on the grounds of Washington University's Tyson Research Center near St. Louis, Missouri.