



CCGP Newsletter

February 7, 2022

Contents

- 01: CCGP Mini-Core updates
- 02: CNRA: Public Feedback for 30x30 initiative
- 03: CCGP at PAG XXIX
- 04: CCGP project highlights: Mountain lions
- 05: Reference genome assembly progress
- 06: NAS wildlife workshop

Happy New Year from the CCGP!

We hope everyone had a restful holiday and is currently enjoying a productive 2022.



CCGP Mini-Core Updates

The CCGP Mini-Core is making steady progress towards our goal of completing resequencing about half of the CCGP landscape samples by this summer. Dan Oliveira, our Mini-

Core technician, is roughly halfway through the nearly 4000 samples that have been submitted for DNA extraction and library preparation, most of which have been sent to the [QB3 Genomics core](#) at UC Berkeley for sequencing. [SeqWell](#) has been instrumental to our Mini-Core's progress. Their team has worked with us to create custom kits that allow us to expedite and automate library preparation, increasing our throughput while reducing the likelihood of errors. Most importantly, DNA input requirements are relatively low, making their kits

flexible across the breadth of taxonomic groups, sample age, and quality that are inherent in the CCGP. The SeqWell group has been very responsive and supportive in helping troubleshoot challenges as we encounter them—they are a great part of our team.

A reminder to CCGP PIs, if you are planning on [submitting samples to the Mini-Core](#), please do so as soon as possible.

CNRA: Public feedback for 30x30 initiative



As many of us are aware, in October 2020, Governor Newsom signed his Nature Based Solutions [Executive Order N-82-20](#). This order advocates for the role of natural and working lands in mitigating climate change and advances biodiversity conservation as an administration priority. As part of this order, California committed to the 30x30 initiative, which is the goal of conserving 30 percent of the lands and coastal waters by 2030. The California Natural Resources Agency (CNRA) have released a draft of [Pathways to 30x30: Accelerating Conservation of California's Nature](#) for public review and feedback. Members of the public have through Tuesday, February 15, 2022 to provide their comments.

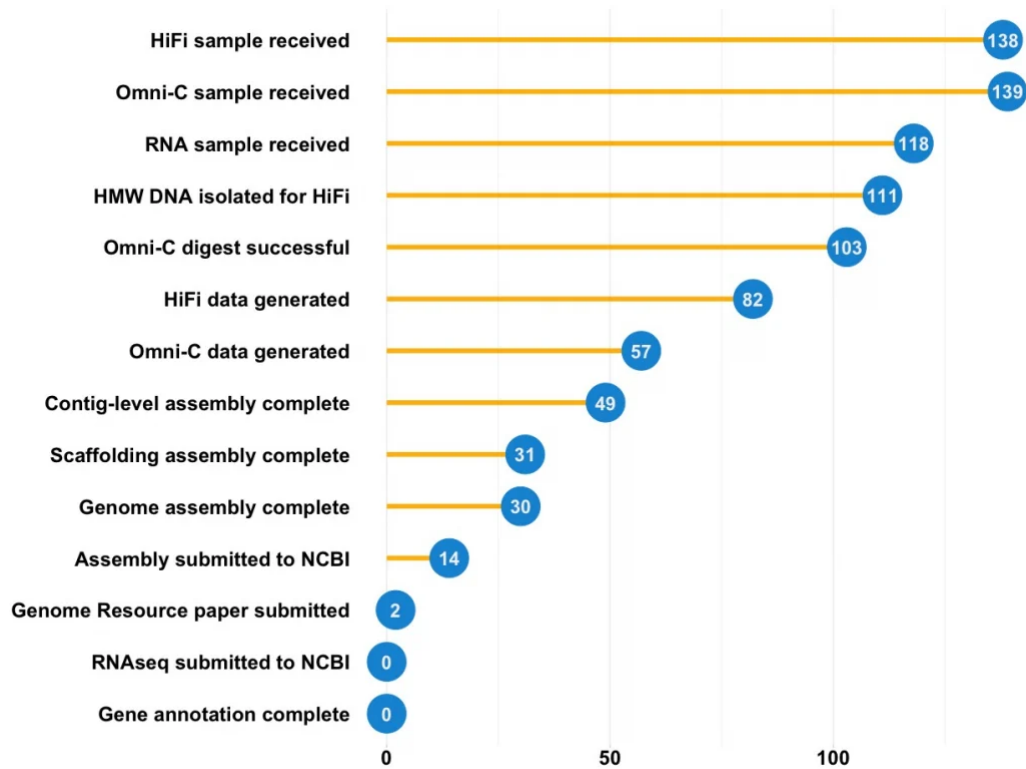


The CCGP presented at PAG XXIX

CCGP Director Brad Shaffer presented at the virtual [Plant and Animal Genome \(PAG\) conference](#) in early January. This conference provided a platform to discuss recent developments and future plans for plant and animal genome projects and was a great opportunity to exchange ideas and applications.

Brad's talk was titled, "Can genomics help save California's biodiversity? The California Conservation Genomics Project" and while the workshop sessions were not recorded, the slides for this talk are available [here](#) on the CCGP website.

Reference genome sequencing progress



Number of Species Completed (as of Feb. 7, 2022)

CCGP projects have been working hard to finish collection and submission of tissue for reference genome generation. We have received all but a handful of samples, and most of the remaining species are federally endangered, making collection difficult. Both lab teams are making exceptional progress with DNA extractions and sequencing. HiFi data has been generated for 50% of all reference genome species and Omni-C is close behind with 40% of species samples sequenced. Our ace genome assembler, Merly Escalona, has assembled 30 reference genomes with 14 submitted to NCBI. The Genome Resource article for *Actinemys marmorata* was recently submitted to the Journal of Heredity and several teams are working on articles for their species. We also have most of the RNAseq samples in hand, and will be sending them for sequencing by the end of February.

CCGP project highlights: Mountain lions

CCGP team member Postdoctoral Researcher Audra Huffmeyer (lead author), and CCGP PI Robert Wayne recently published an article in

Theriogenology entitled, "[First reproductive signs of inbreeding depression in Southern California male mountain lions \(*Puma concolor*\)](#)".

As the title suggests, Huffmeyer's team identified phenotypic evidence of inbreeding depression, including abnormal sperm and kinked tails, in Southern California mountain lions known for their historically small population sizes and low genetic diversity. The team concluded that these mountain lions may continue to experience decreased reproduction and population decline unless



conservation efforts to increase gene flow, including the proposed wildlife crossing across the 101 freeway, are successfully implemented.

NAS wildlife workshop

On February 9-10, 2022, the National Academies of Sciences (NAS), Institute of Laboratory Animal Research (ILAR) will be hosting a virtual workshop entitled “Animal Welfare Challenges in Research and Education on Wildlife, Non-Model Animal Species, and Biodiversity”. The workshop will cover the following topics: perspectives on animal welfare considerations, laws, regulations, and permits associated with fish and wildlife, wild animal population concerns, the role of veterinarians in wildlife research, restraint and handling of animals in the field, and transition of wild animals to captive settings.

This workshop is free to all. You can find more information on the [workshop website](#).

CCGP IN THE NEWS

The CCGP was recently mentioned in two online science news platforms, [Phys.org](#), and [ScienceAlert](#), both discussing the Earth BioGenome Project and the importance of sequencing genomes.



Have anything to share?

As always, if your lab has any interesting information to share or you come across something that may be of interest to the CCGP community, please don't hesitate to let us know. [Click here to get in touch!](#)

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