California Conservation Genomics Project

A collaborative effort to conserve California flora and fauna using conservation & landscape genomics of threatened, endangered and commercially exploited species.
**Ad hoc Planning Committee (today)**

- Thank you for coming today to help develop a plan for the California Conservation Genomics Project (CCGP)
- Why you? Expertise, representation (campus or agency), perspectives on conservation
- Workshop Participants will make recommendations on project design, process and deliverables
- Participants may or may not play a formal role in the project research or future committee structure
- All participants are welcome to submit proposals
- Expectation for today’s group: advise on the CCGP research plan
Timeline of the Genomics Initiative

- **01/2012**
  - Move to UCLA

- **04/2012**
  - Jack Baylis meeting

- **2013**
  - Chuck Bonham provides letter of support
  - FG commission meeting in LA

- **2015**
  - FG commission meeting in LA

- **2016**
  - Host 2-day meeting, cons genomics in Sac

- **2018**
  - Meet with Richard Bloom

- **2019**
  - Bloom team proposes for budget

- **July 2019**
  - Budget approved, $10M
Elements of Genomics Proposal

• 150 species of plants and animals
• 15,000 individuals (100 per species)
• High quality genomic data
• Best available GIS/imagery
• Foundation data for management/policy:
  • State and federal agencies
  • Private and public land managers
Began with Catalyst funding from UCOP for 2016-2019
Campus Leads

• Bob Wayne (UCLA)
• Beth Shapiro (UCSC)
• Jeff Wall (UCSF)
• Michael Dawson (UCM)
• Rasmus Nielsen (UCB)
• Emma Aronson (UCR – added in Year 2)
• Harris Lewin (UCD – unfunded)

Executive Director

• Rachel Meyer (UCLA, now at UCSC)
Some Consortium Goals:

• Annual meetings and workshops: PI meetings, RNA and Conservation, support for students for La Kretz Conservation Genomics workshop
• Funding for reference genomes
• Funding for ongoing/new conservation genomics
• Building a team of conservation genomics faculty, staff, students
Three shortcomings:

- Analyze species in isolation
- Different genomic methods
- Anonymous loci
CCGP proposed approach

- Identify 150 focal species
- 100 individuals per species
- Focus on endangered and indicator species
- Same genomic methods => combinable data
Which harbors greater variation?
Are there appropriate corridors between areas of greatest diversity?
Where are tomorrow’s climate adaptation alleles today?
What is success?

• Strong science, lasting value
• Data that change how agencies do their work *now* and in the future
• Collaborative genomic research; total greater than sum of parts
• Lasting contribution to science-based conservation policies
Today’s (modest) goals:

• Gather information
• Hear all voices (Santiago Lerma, facilitator)
• Reach consensus (where we can)
• Build teams to get as much work done as possible, quickly
Topics for today’s meeting

• Genomic methods (Ian, Beth), group discussion
• Species (Erin, Jeff, Cat)*
• Landscapes (Peggy, Ryan)*
• Data management*
• Administration of project*

*assigned breakout groups

Goal: Answer questions on one sheet!
Each group has:

- **One leader**
  - Stay on point, time (strict)
  - Ensure all voices heard
- **One note taker**
  - Summarize and synthesize
  - Ensure group agrees
  - Get that sheet to Santiago!
Administrative organization for oversight of project

• Last session
• Most committee memberships TBD
• We have assembled the Scientific Executive Committee
• Subcommittees may be formed as needed
California Conservation Genomic Scientific Executive Committee (CCG-SEC)

- Responsible for implementation of research project
- Criteria for membership
  - Genomics expertise
  - Motivated conservationist
  - Collaborative
  - Willingness to commit time, 3-5 years
  - Advocate for project, not campuses
- Duties
  - Develop overall project design (with input from others)
  - Develop call for proposals
  - Based on input from proposal review committee, select proposals to fund
  - Meet regularly to oversee research bench marks and productivity
  - Identify and oversee deliverables
  - Collaborate on report preparation
CCG-SEC: small, representative, agile, advocates of project, not home campuses

- Ian Wang, UC Berkeley
- Beth Shapiro, UCSC
- Brad Shaffer/Victoria Sork, UCLA
- Scott Hodges, UCSB
- Peggy Fiedler (Systemwide, NRS)
- CDFW, to be determined
- Mark Gold, Deputy Secretary Oceans