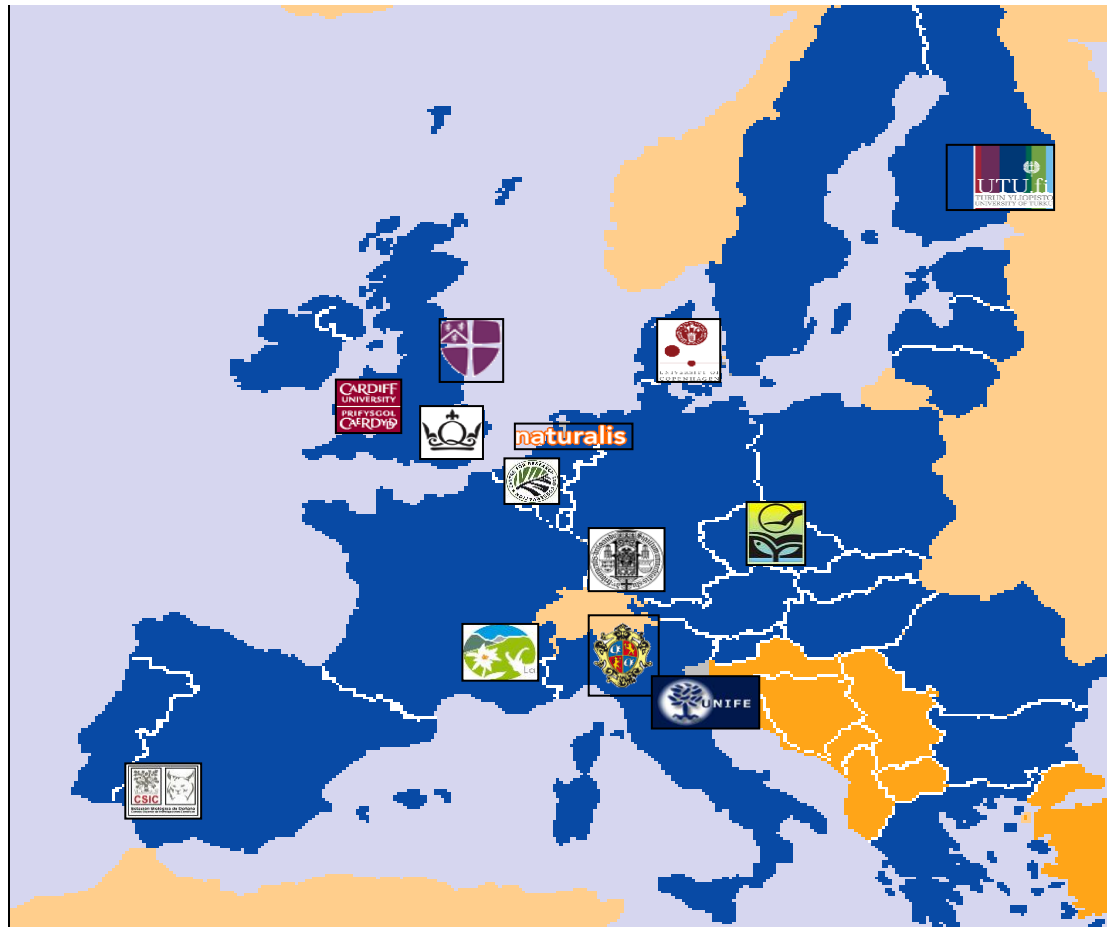




ConGRESS

Conservation Genetic Resources for Effective Species Survival



Peter Galbusera

Royal Zoological
Society of
Antwerp


KMDA

Target 13: By 2020, the genetic diversity of cultivated plants and farmed and **domesticated animals** and of **wild relatives**, including other **socio-economically** as well as **culturally valuable** species, is maintained, and strategies have been developed and implemented for *minimizing genetic erosion* and *safeguarding their genetic diversity*.

ConGRESS aims to bring ‘wild’ genetic diversity into the mainstream of European policy and management decision-making...

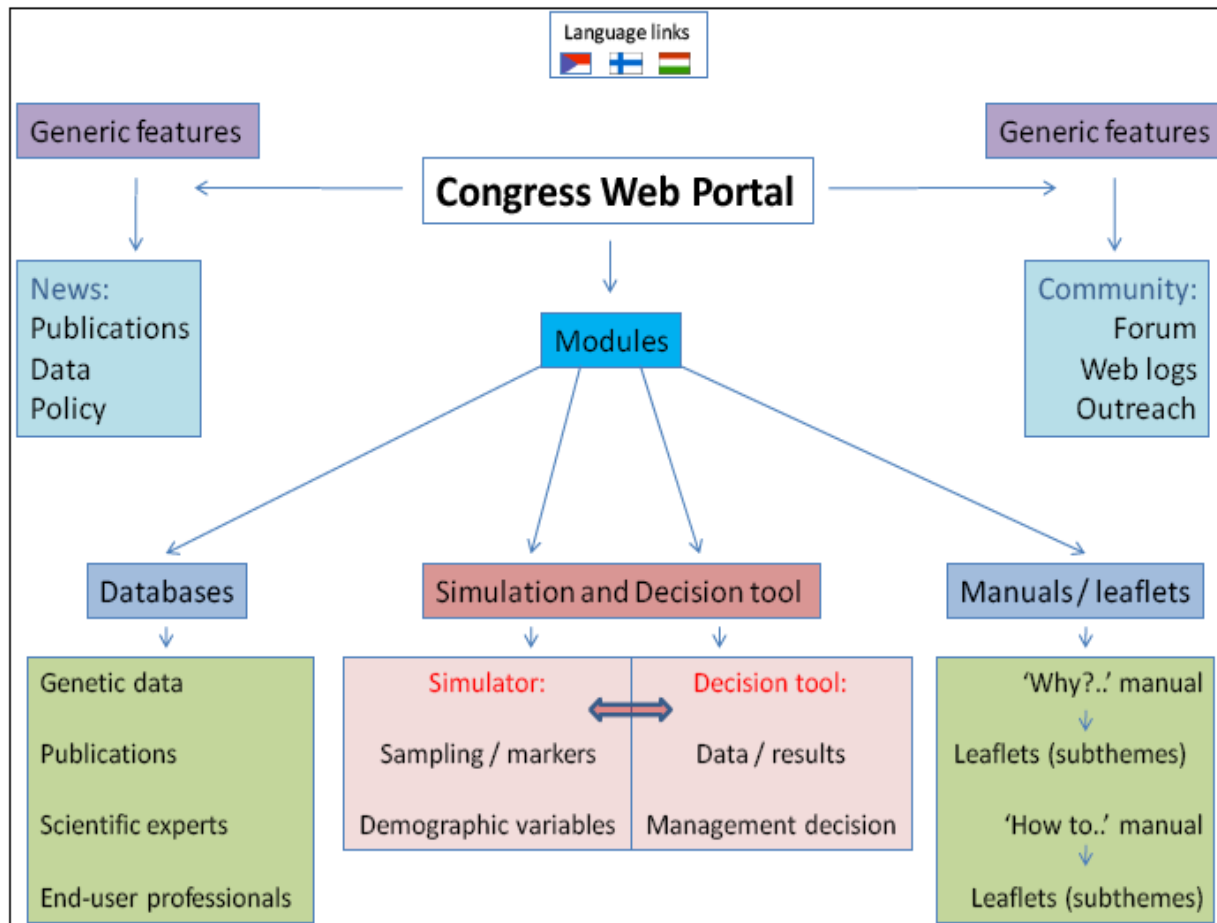
www.congressgenetics.eu

ConGRESS

- ***Conservation Genetic Resources for Effective Species Survival***
(www.congressgenetics.eu)
- EU: Coordination and Supporting Action
(Supporting); 2010-2013
- **Specifically:** *To provide a user-friendly information portal to promote effective communication about biodiversity policy and management needs, and to enable the quick access of relevant genetic information*



ConGRESS



ConGRESS & EU BON

- **Synergy:** ConGRESS is about being more effective in conservation by involving policy makers and managers
- **Lessons:**
- ConGRESS stands or falls by how we engage end-users
 - Identification and engagement of key workshop participants
 - End-user 'Champion'?
 - Multi-level engagement (expert – novice)
- We cannot force the tools to be used, but we can eliminate any impediments, misconceptions...

Common (mis)conceptions about 'wild' genetic data

- There is very little data
 - *Molecular Ecology* published 21 volumes, 12 issues per most volumes, 20 papers per issue = approx 3,500 papers alone
 - Our database of genetic studies on wild European threatened taxa has 4,000 publications...
 - Google Scholar, "Open Access" journals, GenBank, DRYAD,...
- There are no common approaches
 - Methods do change but metrics are robust and can be applied across studies with care (development of EBV in BIP)

Common (mis)conceptions about 'wild' genetic data

- There are no repeated measurements
 - This is the case with many species but for some (livestock, crops, *key wild species*) this is not true either
 - Even where it is the case, data can still be collected in time for 2020... (if we advise people on what to collect and soon)
- It is too expensive
 - Personnel is now the highest cost and this applies to everything....



ECOLOGY

Conservation in captivity

Zoos provide an opportunity to work on crucial issues of biodiversity while reaching out to the public.

BY AMANDA MASCARELLI

Barbara Durrant heard about San Diego Zoo's reproductive-research department while she was pursuing her doctorate in reproductive physiology in the late 1970s. "I wrote to the founder and got a wonderful letter back saying, 'Yes, we're starting this new

research effort here. When you finish your PhD, get back in touch with me,'" recalls Durrant. In 1979, she began a two-year postdoc at the zoo in California.

Looking for a second project towards the end of her stint, Durrant began collecting viable eggs, sperm and embryos from animals that had died, and storing them in the

major collections of cryopreserved cells from zoo animals. In 1980, she initiated the Germ-plasm Repository — a collection of frozen reproductive cells from endangered species that capture genetic diversity, allowing it to be reintroduced into gene pools. In so doing, she helped to launch the field of gamete research. After her postdoc ended later that year, the zoo offered Durrant a permanent research position. Now director of reproductive physiology at San Diego Zoo Global, the conservation organization that runs the zoo, Durrant heads a team that designs reproductive-research programmes for rare and endangered species including giant pandas, rhinoceroses and Przewalski's horses. "The greater scientific community is coming to understand the importance of genetic diversity," says Durrant. "And zoos harbour the greatest genetic diversity anywhere outside of the natural world."

In the past few decades, zoos and aquariums around the globe have transformed themselves. No longer just family destinations and collections of rare, threatened and endangered animals, they are also research institutions with conservation and science at the core of their mission. Zoos are well positioned to manage populations of animals whose numbers are rapidly dwindling in their natural habitat, and, in some cases, to reintroduce them into the wild. And although they have tended to emphasize captive-breeding programmes, zoos are becoming increasingly focused on field-based research and on saving species in the wild.

CALL OF THE WILD

Research positions involving conservation at zoos and aquariums are still relatively sparse. But many scientists find such jobs deeply satisfying. The research is mission-driven and aimed at solving immediate problems, so zoological facilities tend to attract scientists who embrace an applied approach, says Allison Alberts, chief conservation and research officer at San Diego Zoo Global.

"I always thought I was going to end up in the traditional academic environment," says Alberts. "I value academic research very much. But I wanted to do something more immediate. I saw a crisis in the world that needed to be addressed now. I felt like, 'I don't have the luxury to wait and see if my research is going to be relevant 30 years from now — I want to be doing something that's solving the conservation problem today.' And the zoo gave me the opportunity to do that." ►

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How Zoo Populations Can Contribute to Conservation

- Fundraising opportunities
- Research collections (species biology and husbandry)
- Education/exhibit opportunities
- Demographic and Genetic backup for wild populations (eg Frozen Zoo)

