

16 April 2013

Saratoga Horticultural Research Endowment

Progress Report – Propagating Xerophytic Ferns as Potential Landscape Plants for California

The xerophytic fern propagation and assessment project got off to a slow start in that we were unable to identify a suitable student assistant to work on the project. In July of last year we requested a six month extension and permission to use awarded funds to hire an hourly worker rather than a student assistant. Upon receiving approval we were able to identify a very competent individual, Basil Medieros, who officially started in September; he has been working on the project since that time. He spent the first few months collecting spore of targeted species throughout the Garden, ordering supplies, and consulting with Garden propagator Susan Malisch regarding spore cleaning and general propagation protocol. He conducted an initial sowing of spores of the eight taxa targeted in October 2012. While waiting for spores to produce gametophytes, known as prothalli, he harvested spores from an additional 10 taxa of relatively dry growing/ Mediterranean climate ferns from several UCBG collections, including California, Mexico and Central America, Mediterranean and Southern Africa. All of these spores have been sown and Basil has conducted a second sowing of the original 8 taxa. We will evaluate the additional species and provide information on them in our final report.

As of this writing all taxa have produced gametophytes. Now we are waiting and watching as the first ferns, or sporophytes, begin to form leaves from the mats of prothalli. This has occurred in five of the original taxa so far. We hope to be able to plant out the first individual ferns for field testing by mid-summer, but the exact timing of this phase is somewhat uncertain. It is fairly apparent that this project will extend beyond even the six month extension requested. The UCBG is committed to completing the project and will ensure support for a planting out and growing on assessment phase if that is not reached during the life of SHRE

funding. We believe strongly that xerophytic ferns have great potential in the California horticultural landscape, and want to thank the SHRE for supporting our assessment of these taxa.

Submitted by Chris Carmichael - Associate Director, University of California Botanical Garden at Berkeley.