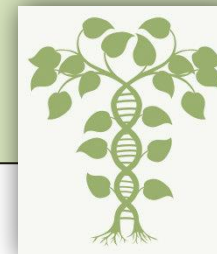


May 2015

NFGEL Project Status



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ON-GOING NFGEL PROJECTS

PROJECT#	PARTNER	SPECIES	CONTACT	PROJECT TITLE	STATUS
248	FS-R6	Golden Chinquapin	A. Bower	Genetic structure of Golden Chinquapin (<i>Chrysolepis chrysophylla</i>)	716 samples. Isozymes extracted; 1/3 of samples run; marker dropped due to poor resolution. DNA isolated; 7 SSR loci are complete: data at 9 additional SSR loci are being generated (approximately 70% complete). Next-generation sequencing data has been obtained for a subset of samples from Oregon State University partner, and full analysis of remaining samples is underway at NFGEL.
258	FS-R6	<i>Sisyrinchium sarmentosum</i>	A. Bower	Hybridization and species identity in <i>Sisyrinchium sarmentosum</i>	Project is in reporting phase.
259	FS-R8	Longleaf Pine	B. Crane	Is there a genetic difference between the traditional coastal sources and the piedmont sources of longleaf pine?	Project is in reporting phase with Craig Echt (USFS-SRS).
268	FS-R6	Oregon White Oak	A. Bower	Oregon white oak genetic diversity and geographic differentiation	564 samples. Isozyme prepped, DNA extracted, and remaining leaf tissue lyophilized. Amplification conditions for 12 SSR loci are being tested.
270	Oregon State Univ.	Douglas-fir, Western White Pine	G. Howe	SNP development in Douglas-fir and western white pine	DNA extracted and shipped to University of Arizona for SNP development. Further DNA may be needed for additional development work pending partner request.

PROJECT#	PARTNER	SPECIES	CONTACT	PROJECT TITLE	STATUS
273	FS-R1-6/BLM	Ponderosa Pine	M.Mahalovich/R. Means	Genetics relationships of isolated, disjunct ponderosa pine stands	DNA extracted, isozymes prepped, needles counted. Awaiting anticipated shipment of additional samples in the fall of 2015. These samples will fill in holes in the ponderosa database or be off site stands that need seed source identification.
290	FS-R8	Atlantic white cedar	B.Crane	Atlantic white cedar conservation and restoration	162 samples from approximately 20 locations received. DNA extracted, isozymes prepared, remaining tissue lyophilized. Waiting for additional samples and proposal form.
294	FS-R8	Table Mountain Pine	B.Crane	Table mountain pine conservation and restoration	346 samples received. DNA extracted from all (average yield = 9ug). Needles from each sample freeze-dried. DNA from 23 samples shipped to FS-SRS to aid in marker development. Waiting for markers to be developed (20 loci) before proceeding with SSR runs.
295	FS-R1	<i>Festuca</i> species	M.Mahalovich	Species identification and cultivar detection in <i>Festuca</i> collections from Montana	A panel of samples for marker screening have been germinated and are growing in the greenhouse. The panel has been examined for DNA content using flow cytometry. Screening for isozymes, microsatellites, ITS, and cpDNA sequence variation is underway.
298	FS-R6	<i>Packera</i>	M.Darrach	A molecular genetic comparison of <i>Packera</i> "novum" and <i>Packera cana</i> in Washington State	A total of 170 samples from 7 populations shipped to NFGEL have been prepped for isozymes, had DNA extracted, and have been examined for DNA content via flow cytometry. Remaining tissue lyophilized for preservation. Marker screening (ITS and cpDNA) is underway. Isozyme analyses will be conducted summer 2015.
299	Center for Natural Lands Management	Spineflower	D.Rogers	Genetic studies of <i>Chorizanthe parryi</i> var. <i>fernandina</i> (San Fernando Valley Spineflower)	Leaf tissue from the field collections have been received, examined for DNA content using flow cytometry, and have had DNA isolated. Samples are being examined at 7 microsatellite loci. A screening panel are being examined for ITS and cpDNA sequence variation. Seed have been collected, delivered to NFGEL, and cleaned. Germination and greenhouse requirements are being assessed for the controlled crossing experiments.
301	FS-PSW	rust	D.Vogler	Species identification of <i>Cronartium</i>	DNA extracted from submitted infected leafs and spores. Waiting for additional spores to be delivered around June 2015. We have the primers ordered and in the lab. Once final DNA is obtained, we will run PCR reactions and sequence.
304	FS-R6	<i>Sidalcea</i>	C.Emerson	Resolving taxonomic confusion around <i>Sidalcea setosa</i> and <i>Sidalcea oregana</i> ssp. <i>spicata</i>	90 samples have been received. More are expected spring/summer of 2015 but have not yet arrived. All samples have been prepped for isozymes, and remaining leaf tissue freeze-dried for possible DNA extraction later if needed. A subset of samples was also run for ploidy.

PROJECT#	PARTNER	SPECIES	CONTACT	PROJECT TITLE	STATUS
310	FS-all Regions	<i>Botrychium</i>	S.Popovich	Technology transfer of allozyme markers for species identification in <i>Botrychium</i> (moonworts)	Further modifications to isozyme protocols will be made this FY to finalize the technology transfer needed for NFGEL to take over isozyme runs for <i>Botrychium</i> species identification.
316	Private Company	Poplar	-----	Identifying poplar escapes	17 samples received. DNA extracted and all samples genotyped at nine microsatellite loci. Data have been analyzed and project is in reporting.
317	NWTIC	Western hemlock	K.Jayawickrama	Ramet identification in western hemlock orchards	1,042 ramets received. DNA has been extracted from 70% of samples. Samples will be genotyped at a target of 6 microsatellites. More microsatellite loci are available in the lab if needed to resolve clonal genotypes.
318	NWTIC	Douglas-fir	B.Marshall	Clonal identification of Douglas-fir pollen samples	Two samples of individual tree pollen received. Samples waiting for DNA extraction and SSR analysis at 6 loci.
319	FS-R6/USFWS	<i>Artemisia</i>	A.Bower	Genetics of <i>Artemisia campestris</i> varieties	124 samples received. Expecting approximately 200 more samples in late summer 2015. All samples received to date have been prepped for isozymes, and 5 samples per variety per location have been analyzed for ploidy variation. Remaining leaf tissue has been lyophilized for possible DNA analyses in the future.
320	FS-R6	<i>Lewisia columbiana</i>	R.Helliwell	Taxonomy of <i>Lewisia columbiana</i>	20 samples received. Expecting over 400 additional samples this spring/summer. For the samples received, isozyme extracts have been prepared, leaf tissue has been placed in collection tube racks and frozen at -80C for possible future DNA extraction, and remaining leaf tissue has been freeze dried.

COMPLETED NFGEL PROJECTS (OCT 2014 – May 2015)

PROJECT #	PARTNER	SPECIES	CONTACT	PROJECT
269	FS-R6	Baker Cypress	A.Bower	Genetic diversity and population structure in the rare, endemic Baker cypress (<i>Hesperocyparis bakerii</i>): update. (Original report in FY13; report submitted for publication in FY15).
277	NWTIC	Douglas-fir	K.Jayawickrama	Ramet identification and parental verification in Douglas-fir (<i>Pseudotsuga menziesii</i>) clones. A total of 477 parents, 420 forward selections, and 3,691 ramets were genotyped at six SSR loci for purposes of ramet ID and parental verification. Information was captured in three NFGEL Project Reports (one per orchard-cooperator).
285	Private Company	Poplar	-----	DNA fingerprinting elite Populus clones. Taxonomic assessment was made in 91 trees using nine microsatellite loci.
300	FS-PSW	Torrey pine	T.Ledig	Is a Torrey Pine stand found in Bolinas, CA natural or planted? Isozyme variation showed that this unusual Torrey pine stand in Bolinas, CA is likely planted and not a naturally occurring stand.
302	FS-R8	Butternut	B.Crane	Distinguishing butternut (<i>Juglans cinerea</i>) in the southeast U.S. from Japanese walnut (<i>J. ailantifolia</i>) and hybrids. Three genetic markers (two nuclear and one chloroplast) revealed that 37% (97/264) of putative pure butternuts were likely Japanese walnut, black walnut, and /or simple and complex butternut hybrids.
303	Private Company	Slash Pine, Loblolly Pine	-----	Ramet identification and parental verification in slash and loblolly pine clones. A total of 1,270 trees were genotyped at six microsatellite loci in order to confirm ramet/clonal identity and verify parentage.
306	FS-R9	Butternut	S.Rogers, P.Berrang	Distinguishing butternut (<i>Juglans cinerea</i>) from Japanese balnut (<i>J. ailantifolia</i>) and their hybrids. Three genetic markers (two nuclear and one chloroplast) revealed that 4% (2/48) of putative pure butternuts were likely butternut hybrids.
307	Private Company	Douglas-fir	-----	Ramet identification in Douglas-fir clones. A total of 403 trees were genotyped at six microsatellite loci in order to confirm ramet/clonal identity.
308	FS-RMRS	Limber Pine	A.Schoettle	Limber pine family identification. Isozymes were used to verify the family identities of two open pollinated families of limber pine being used in association studies of stress tolerance with rust resistance.
309	FS-PNW	Douglas-fir	R.Cronn	DNA extraction from Douglas-fir for SNP development. DNA was extracted from 398 needle or seedling samples of Douglas-fir. Approximately 1 ug of DNA per sample was shipped back to the project partner.
311	Private Company	Douglas-fir	-----	Verification of clonal genotypes in Douglas-fir (<i>Pseudotsuga menziesii</i>). Sixty Douglas-fir trees were genotyped at six microsatellite loci to verify their clonal genotypes.
312	Oregon State University	Douglas-fir	M.Trappe	DNA extraction from desiccated Douglas-fir needles. DNA was extracted from 288 samples of desiccated needle tissue. Approximately 9 ug of DNA per sample was shipped back to the project partner.
313	Private Company	Douglas-fir	-----	Ramet identification and parental verification in Douglas-fir (<i>Pseudotsuga menziesii</i>) samples. Twenty-four Douglas-fir trees were genotyped at six microsatellite loci to make the clonal and parental verifications.
314	Private Company	Poplar	-----	Genetic fingerprinting mystery Poplars. Data at nine microsatellite loci were used to determine the clonal identity of six submitted poplar trees.
315	FS-R5	Sugar pine	A.Ferreira	Marker assisted selection for blister rust resistance in sugar pine. DNA was extracted from known 'R' and known 'r' sugar pine megagametophytes in support of efforts to identify the blister rust resistance gene.

PROJECT IDEAS IN DEVELOPMENT

PARTNER	SPECIES	CONTACT	PROJECT TITLE
FS-R5	Sugar pine	J.Dunlap	Genetic diversity and structure of Southern California sugar pine
FS-R6	Milkweed	M.Horning	Genetic structure of milkweed (<i>Asclepias</i>)
FS-R6	Large round-leaved orchid	A.Bower	Genetic variability within and among sites of large round-leaved orchid (<i>Platanthera orbiculata</i>)
FS-R6	Iris	A.Bower	Is a northern most population of <i>Iris tenax</i> native or unintentionally transplanted
FS-R6	Tanoak	R.Sniezko	Genetic structure and management of tanoak
FS-R8	Slash, Loblolly	B.Crane	Genotyping southern pine orchards.
FS-R10	<i>Vaccinium</i> spp.	M.Stensvold	Examining genetic distinctiveness of <i>V. ovalifolium</i> ssp. <i>alaskaense</i> , and testing the putative hybrid origin of "Beebleberry".
FS-R10	Dune tansy	M.Stensvold	Examining the possible migrant source of a disjunct population of dune tansy (<i>Tanacetum bipinnatum</i> subsp. <i>Huronense</i>).
NRCS	Tanglehead	S.Mitchell	Is southern Texas Tanglehead more similar to local invasive Tanglehead or to non-invasive Australian Tanglehead
Sierra Pacific Ind.	<i>Lewisia</i> spp.	J.O'Brien	Morphometric analysis of the <i>Lewisia kelloggii</i> group from California.
Private Company	Western Hemlock	-----	Ramet and clonal identification in orchard material
UC Davis	Coast redwood	D.Neale	Haploid verification of DNA extractions from megagametophytes
Center for Natural Lands Management	San Diego Thornmint	D.Rogers	Confirmation of cytotype variation in <i>Acanthomintha ilicifolia</i> (San Diego thornmint) using flow cytometry