

## **Molecular Genetic Sampling**

Susan Haig (susan\_haig@usgs.gov)

### **Common Molecular Techniques Used in Conservation Studies**

Technique	Parentage	Pedigree	Pop. structure	Pop. Diff.	Subsp.	Interspecific
Microsatellites	X	X	X	X	(X)	
AFLP	X	X	X	X	X	
mtDNA			X	X	X	X

### **General Sampling Guidelines for Genetic Screening**

Technique	Parentage/Pedigree 20+ complete families	Pop. structure /Pop. Diff. 20+ind./pop, 5+ pop.	Hybrid/Phylogeny 5-10+ind./group + outgroup
Microsatellites	5 -10 variable loci	5 -10 variable loci	
AFLP	20+ variable bands	20+ variable bands	20+ variable bands
mtDNA		400-800+ base pairs	400-800 base pairs

### **Approximate Costs and Time Involved with Various Molecular Techniques.**

Technique	Cost	Time Commitment (assuming skilled tech) <sup>1</sup>
DNA extraction	\$3/sample	Short--week
AFLPs	\$5/sample/primer	Medium--months
mtDNA	\$20/sample	Medium--months
Microsatellites	\$3/sample/locus <sup>2</sup>	Can be long--many months

<sup>1</sup>These costs do not include the much more expensive screening process.

<sup>2</sup>Must be multiplied by # loci.

**SEXING:** send blood or DNA (preferred) to Zoogen ([www.zoogen.biz](http://www.zoogen.biz)).