Rare plants
by Lynn G. Clark

The Atlantic forests of coastal Bahia, Brazil, harbor some of the greatest diversity of plant life on the planet. Within the last few decades, however, the formerly extensive forests have been reduced to approximately 3% of their original cover due to the cultivation of cacao and other crops. An extremely rare but evolutionarily significant species of the grass family, referred to here as Species X, occurs in these forests. This species is known from only three populations along a 6 km stretch of road in the cacao-growing region of Bahia; at last count in 1994, a total of about 80-100 plants was found in the three populations.

One of the populations grows at the edge of a cacao grove, and none occurs within a protected area. It is possible that additional populations of the species occur in the area although botanists have looked for it and not found it. Recent studies have shown that Species X is one of the few existing representatives of the earliest lineages of the grass family; these ancient, broadleaved, tropical forest grasses almost certainly evolved in the Cretaceous and coexisted with the dinosaurs.

Several botanists have visited the natural populations of Species X over the last 20 years, and a few live plants were removed for cultivation in Brazil and the United States during this time.

Although collecting regulations were less strict then than they are today, it is not clear that the live plants were taken out of Brazil with the proper authorization. Regulations in force today (including principles agreed upon at the Rio summit) would probably permit the collection of such plants for research purposes but would not allow for their commercial distribution without some form of compensation to the Brazilian government. Exact GIS coordinates for the three populations of this species have been obtained, but will not be released to the general public or scientific community. This species is currently in cultivation in two places in Brazil, but at least 20 plants are in cultivation at various universities and botanical gardens in the United States. Although the species has some attractive qualities, it grows slowly and probably has little potential for development as an ornamental. It would be of interest to collectors mainly due to its rarity. Species X is extremely rare and extremely significant evolutionarily, a combination which would give it the highest priority according to some conservation biologists.

By any criteria, Species X is a rare, endangered species, but it has not yet been formally listed as such.

**Discussion Questions**
1. Should a coordinated attempt to preserve one or all of the natural populations be undertaken, even if the publicity engenders local hostility? Or is it sufficient to leave well enough alone, given that the species has survived this long, and hope that additional but as yet undiscovered populations are out there somewhere?
2. Scientific data, once published, are considered to be in the public domain. Data generated from federally funded research might be considered public property. Should the exact locality data of Species X be published, even if that exposes the species to unscrupulous collectors (both amateur collectors have been known to extirpate species in the wild, and in a few instances, overzealous biologist have apparently collected species to extinction)?
3. If money to fund research and/or conservation efforts related to Species X could be raised by selling plants grown in captivity, should any of that money be returned to the Brazilian government?
4. International and federal regulations governing species officially listed as rare or endangered can inhibit research efforts by making it extremely difficult to legally import material, while at the same time calling attention to the rarity of the species. Those who smuggle rare plants and animals are often not caught...
anyway, but a legitimate researcher or grower cannot afford to ignore legal restrictions. Should Species X be listed formally as being rare or endangered (e.g., CITES)?

5. What if permit regulations for the collection and exportation of such plants for research purposes required that the material be destroyed upon completion of the research, unless the species were officially listed as rare and endangered?