*Cyanea koolauensis* to replace *Rollandia angustifolia* when they merged *Cyanea* and *Rollandia*, as the name *Cyanea angustifolia* had already been used.

Cyanea koolauensis, a member of the bellflower family, is an unbranched shrub with woody stems, 1 to 1.5 m (3.5 to 5 ft) tall. The leaves are linear to narrowly elliptic with a whitish underside, 16 to 36 cm (6.3 to 14.2 in) long and 1.5 to 4 cm (0.6 to 1.6 in) wide. The leaf edges are hardened with shallow, ascending rounded teeth. The leaf stalks are 1.5 to 4.5 cm (0.6 to 1.8 in) long. The flowering stalks are three to six-flowered. The flowering stalk is 15 to 40 mm (0.6 to 1.6 in) long. The hypanthium (basal portion of the flower) is 6 to 12 mm (0.2 to 0.5 in) long. The calyx lobes are fused into a sheath 2 to 8 mm (0.08 to 0.3 in) long. The dark magenta petals are 5 to 9 cm (2.0 to 3.5 in) long. The fruit is a round berry. Cyanea koolauensis is distinguished from others in this endemic Hawaiian genus by the leaf shape and width, the whitish green lower leaf surface and, the lengths of the leaf stalks, calyx lobes, and hypanthium (Lammers 1990).

Cyanea koolauensis was known historically from 27 scattered populations throughout the Koolau Mountains on Oahu (HHP 1994g1 to 1994g28). Currently 14 populations totalling fewer than 50 plants are known from the Waimea-Malaekahana Ridge to Hawaii Loa Ridge in the Koolau Mountains. These populations occur on City and County of Honolulu land, private land, and State land, including land leased to the DOD for the Kahuku and Kawailoa Training Areas (HHP 1994g1 to 1994g12, 1994g18, 1994g19, 1994g22). Cyanea koolauensis is usually found on slopes and ridge crests in wet 'ohi'a-uluhe forest or shrubland at elevations from 520 to 810 m (1,700 to 2,660 ft). Associated plant taxa include alani, Antidesma sp. (hame), Diplopterygium pinnatum, Psychotria sp. (kopiko), and *Scaevola* sp. (naupaka) (HHP 1994g1 to 1994g12, 1994g18, 1994g19, 1994g22; Lammers 1990).

*Cyanea koolauensis* is threatened by habitat destruction by feral pigs, potential impacts from military activities, potential predation by rats, competition with the aggressive alien plants Koster's curse and strawberry guava, trampling by hikers, overcollection, and a risk of extinction from naturally occurring events and/or reduced reproductive vigor due to the small number of remaining individuals (HHP 1994g1 to 1994g5, 1994g7, 1994g22; Loyal Mehrhoff, U.S. Fish and Wildlife Service, J. Lau, C. Russell, and J. Yoshioka, pers. comms. 1994).

*Cyanea longiflora* was first collected by Hillebrand on Oahu and named in 1873, by Dr. Heinrich Wawra, as *Rollandia longiflora* (Hillebrand 1888). Other names considered synonymous with *Rollandia longiflora* are *R. lanceolata* var. *brevipes* and *R. sessilifolia* (Degener 1932, Lammers 1990, Wimmer 1953). Recently Lammers *et al.* (1993) published the new combination *Cyanea longiflora*. The specific epithet refers to the long flowers.

Cyanea longiflora, a member of the bellflower family, is an unbranched shrub with woody stems 1 to 3 m (3.5 to 10 ft) long. The leaves are elliptic or inversely lance-shaped, 30 to 55 cm (12 to 22 in) long and 6 to 12 cm (2.4 to 4.7 in) wide. Mature leaves have smooth or hardened leaf edges with shallow, ascending, rounded teeth. The flowering stalks are 5 to 10-flowered and 30 to 60 mm (1.2 to 2.4 in) long. The calvx lobes are fused into an irregularly toothed sheath 2 to 4 mm (0.08 to 0.2 in) long. The petals, 6 to 9 cm (2.4 to 3.5 in) long, and the hairless staminal column are dark magenta. The berries are almost pear-shaped. Cyanea longiflora differs from others in this endemic Hawaiian genus by the fused calyx lobes (Lammers 1990)

Cyanea longiflora was known historically from five populations in the Waianae Mountains and six populations in the Koolau Mountains of Oahu (HHP 1994h1, 1994h2 to 1994h14). Currently five populations of this species are known—Pahole Gulch, Makaha Valley, and Makaha-Waianae Ridge in the Waianae Mountains and Kawainui Drainage and Opaeula Gulch in the Koolau Mountains (HHP 1994h1, 1994h3, 1994h11 to 1994h14). These 5 populations total between 220 and 300 plants. The populations are found on City and County of Honolulu land, private land leased by the DOD for the Kawailoa Training Area, and Stateowned land, including Pahole NAR. Cyanea longiflora is usually found on steep slopes or ridge crests in mesic koa-'ohi'a forest in the Waianae Mountains or wet 'ohi'a-uluhe forest in the Koolau Mountains, usually between 620 and 780 m (2,030 and 2,560 ft) elevation. Associated plant taxa in koa-'ohi'a forest include hame, kopiko, uluhe, Coprosma sp. (pilo), and Syzygium sp. ('ohi'a ha). In wet 'ohi'a-uluhe forest, associated native taxa include 'akia, alani, *Cibotium* sp. (hapu'u), *Dubautia* sp. (na'ena'e), Hedyotis sp., and Pittosporum sp. (ho'awa) (HHP 1994h1, 1994h3, 1994h11, 1994h13, 1994h14; Lammers 1990).

The major threats to Cyanea longiflora are habitat degradation and/or destruction by feral pigs, potential impacts from military activities, potential predation by rats, competition with the alien plants strawberry guava and Rubus argutus (prickly Florida blackberry) in the Waianae Mountains and Koster's curse in the Koolau Mountains, potential fire, and a risk of extinction from naturally occurring events and/or reduced reproductive vigor due to the small number of remaining, widely dispersed populations (HHP 1994h1, 1994h3, 1994h12 to 1994h14; J. Lau, C. Russell, and J. Yoshioka, pers. comms. 1994).

While hiking in the Koolau Mountains of Oahu, Edward Hosaka collected a new lobelioid which he later described and named *Rollandia st.johnii* (St. John and Hosaka 1935). *Rollandia st.-johnii* var. *obtusisepala* (Wimmer 1953) is not recognized in the most recent treatment of Hawaiian members of the family (Lammers 1990). Lammers et al. (1993) published the new name *Cyanea st.-johnii* when *Cyanea* and *Rollandia* were merged. The specific epithet honors the late Harold St. John.

Cyanea st.-johnii, a member of the bellflower family, is an unbranched shrub with a woody stem 30 to 60 cm (12 to 24 in) long. The leaves are lanceshaped to inversely lance-shaped, 6 to 13 cm (2.4 to 5.1 in) long and 1.5 to 2 cm (0.6 to 0.8 in) wide. The leaf edges are thickened, smoothly toothed, and curl under. The flowering stalk is 5 to 15 mm (0.2 to 0.6 in) long, with 5 to 20 flowers. The hairless, white petals, 3 to 6 cm (1.2 to 2.4 in) long, are suffused with pale violet in the inner surface. This species is distinguished from others in this endemic Hawaiian genus by the length of the leaves, the distinctly curled leaf margins, and the petal color (Lammers 1990).

Cyanea st.-johnii was known historically from 11 populations in the central and southern Koolau Mountains of Oahu (HHP 1994i1 to 1994i11). Currently between 40 and 50 plants are known from 5 populations—Waimano Trail summit to Aiea Trail summit, the summit ridge crest between Manana and Kipapa trails, between the summit of Aiea and Halawa trails, Summit Trail south of Poamoho cabin, and Wailupe-Waimanalo summit ridge. These populations are found on City and County of Honolulu, private, and State lands (HHP 1994i1, 1994i7, 1994i9 to 1994i11). This species typically grows on wet, windswept slopes and ridges from 690 to 850 m (2,260 to 2,800 ft) elevation in 'ohi'a mixed shrubland or 'ohi'a-uluhe shrubland. Associated