A longitudinal survey of mosquito larval habitats was carried out in Asembo Bay, western Kenya, during the rainy season of 1998. All pools of standing water along a 700-m transect were sampled twice per week. For each habitat, eight environmental variables were recorded and a sample of anopheline larvae was collected for identification. In total, 1,751 Anopheles gambiae s.l. and 2,784 Anopheles funestus Giles were identified. Identification of An. gambiae s.l. by polymerase chain reaction (PCR) indicated that 240 (14.7%) were An. gambiae Giles and 858 (52.4%) were An. arabiensis Patton; PCR failed to identify 539 (32.9%) specimens. Repeated measures logistic regression analysis indicated that An. gambiae and An. arabiensis larvae were associated with small, temporary habitats with algae and little or no aquatic vegetation. Anopheles funestus larvae were associated with larger, semipermanent bodies of water containing aquatic vegetation and algae. Direct comparison of habitat characteristics associated with either An. gambiae or An. arabiensis revealed that algae were associated more commonly with habitats containing An. gambiae; no other differences were detected. Chi-square analysis indicated that these species were collected from the same habitat more frequently than would be expected by chance alone. Together, these results indicate that An. gambiae and An. arabiensis have similar requirements for the larval environment and that, at least in western Kenya, they do not segregate into separate habitats.