Honeybees are an ideal model system for understanding the evolutionary basis of aging because of their extraordinary ability to adjust the aging process of workers according to colony needs. The lifespans of workers change according to the seasonal pattern of colony activity; while summer workers live only two to three weeks, winter workers may live up to 10 months. Workers can also extend their lifespans by postponing foraging. The prevailing evolutionary theory for aging in social insects suggests that senescence is a result of selection to optimize a trade-off between investing resources in somatic maintenance and reproduction. This ‘disposable soma’ theory predicts that colonies should invest more heavily in workers that have a lower risk of being lost to extrinsic mortality. In addition, the reallocation of resources from brood rearing to somatic maintenance explains the greater lifespans of winter compared to summer bees. Current theory fails, however, to explain worker lifespan during reproductive swarming. Analysis of colony needs and constraints during swarming reveal that, for colonies to remain of viable size, workers must exhibit extended lifespans despite experiencing equal or greater extrinsic mortality and working as hard as non-swarming workers in direct contradiction to the current disposable soma theory. Using a decision theory model, we can expand on the disposable soma theory of aging to explain this apparent contradiction and predict the optimal level of investment in somatic maintenance of workers under a variety of colony conditions.