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Climate warming has caused species across the globe to shift their geographic ranges in recent years. This phenomenon has inspired us to consider an integrodifference equation (IDE) model for a single-species population whose suitable spatial range changes over time. The model admits traveling pulse solutions, and is very versatile for prescribing various scenarios of climate warming. It is shown that climate warming outruns the shifting population distribution in various warming scenarios. I will use the term "niche deficits" to refer to the distance that the population lags behind. The accumulation of niche deficits is shown to be drastically different between the constant-seed warming case and the accelerated-warming case. (Received August 11, 2013)