If $\psi$ is an infinite order mapping class of a surface $\Sigma$, it is possible that $\psi$ acts trivially on the homology group $H_1(\Sigma, \mathbb{Z})$. I will discuss various methods for analyzing the action of $\psi$ on the homology groups of certain finite covers of $\Sigma$, and I will show that often times one can find a finite cover $\Sigma'$ of $\Sigma$ such that $\psi$ acts with infinite order on $H_1(\Sigma', \mathbb{Z})$. (Received September 19, 2011)