1023-92-642 **David E Hiebeler** (hiebeler@math.umaine.edu), 333 Neville Hall, University of Maine, Orono, ME , and **Benjamin R Morin*** (batmanshotokan@yahoo.com), 1127 NW Harrison Blvd, Corvallis, OR. *The Effect of Static and Dynamic Spatially Structured Disturbances on a Locally Dispersing Population Model.*

Previous models of locally-dispersing populations have shown that in the presence of habitat heterogeneity, increasing spatial autocorrelation in habitat has a beneficial effect on the population; it has also been shown that with increasing spatial autocorrelation in disturbance events which simultaneously affect contiguous blocks of sites has a harmful effect. Here, spatial population models are developed which include both of these exogenous influences, to determine how they interact with each other and with the endogenous spatial structure produced by the population dynamics. The models show that when habitat is fragmented and disturbance occurs at large spatial scales, the population cannot persist no matter how large its birth rate, an effect not seen in previous simpler models of this type. The behavior of the model is also explored when the two effects occur at the same spatial scale. When this scale parameter is very small, habitat fragmentation prevents the population from persisting; when the parameter is very large, large-scale disturbance events drive the population to extinction. Population levels reach their maximum values at intermediate values of the scale parameter, and which is also where the model shows that the population will persist most easily. (Received September 20, 2006)