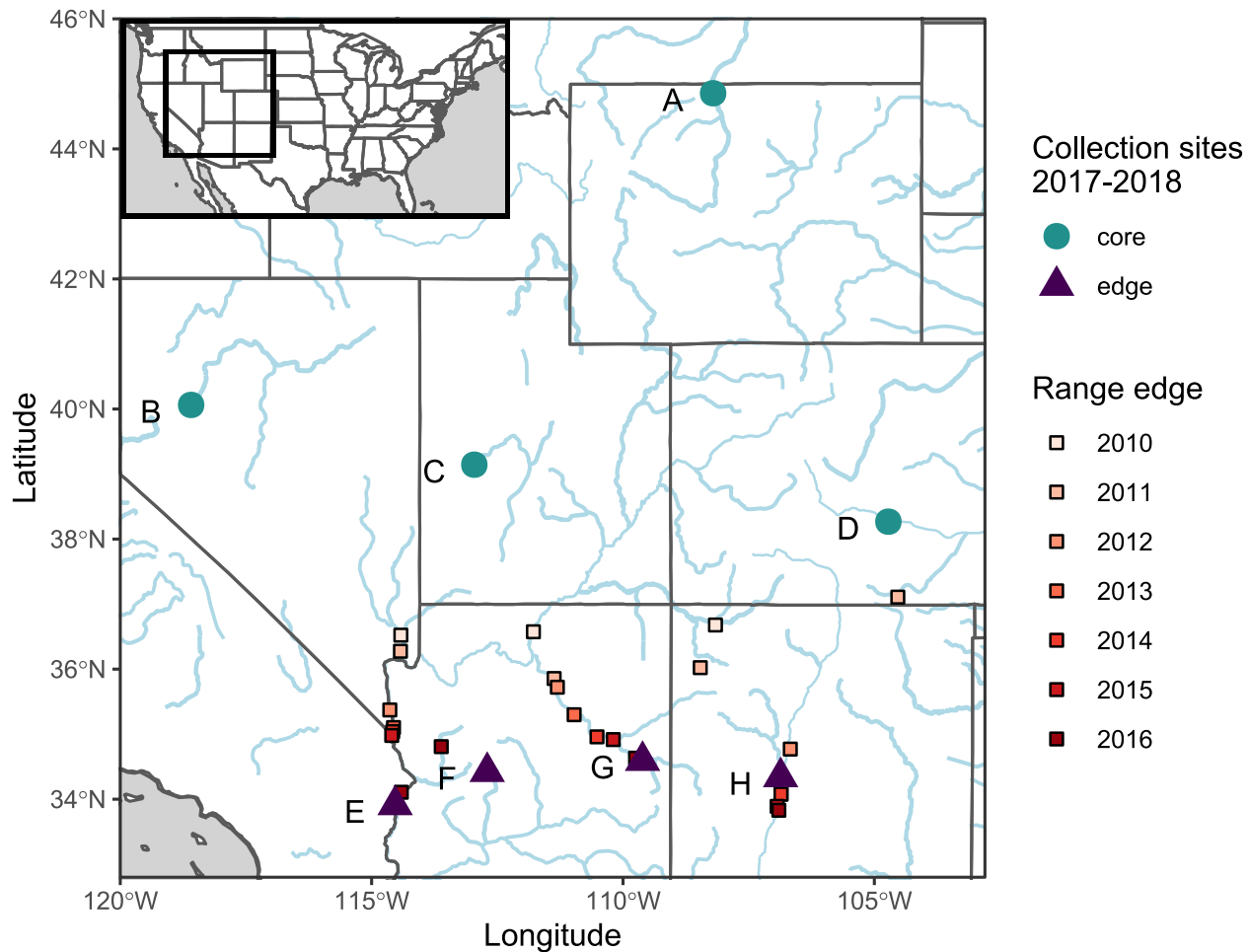


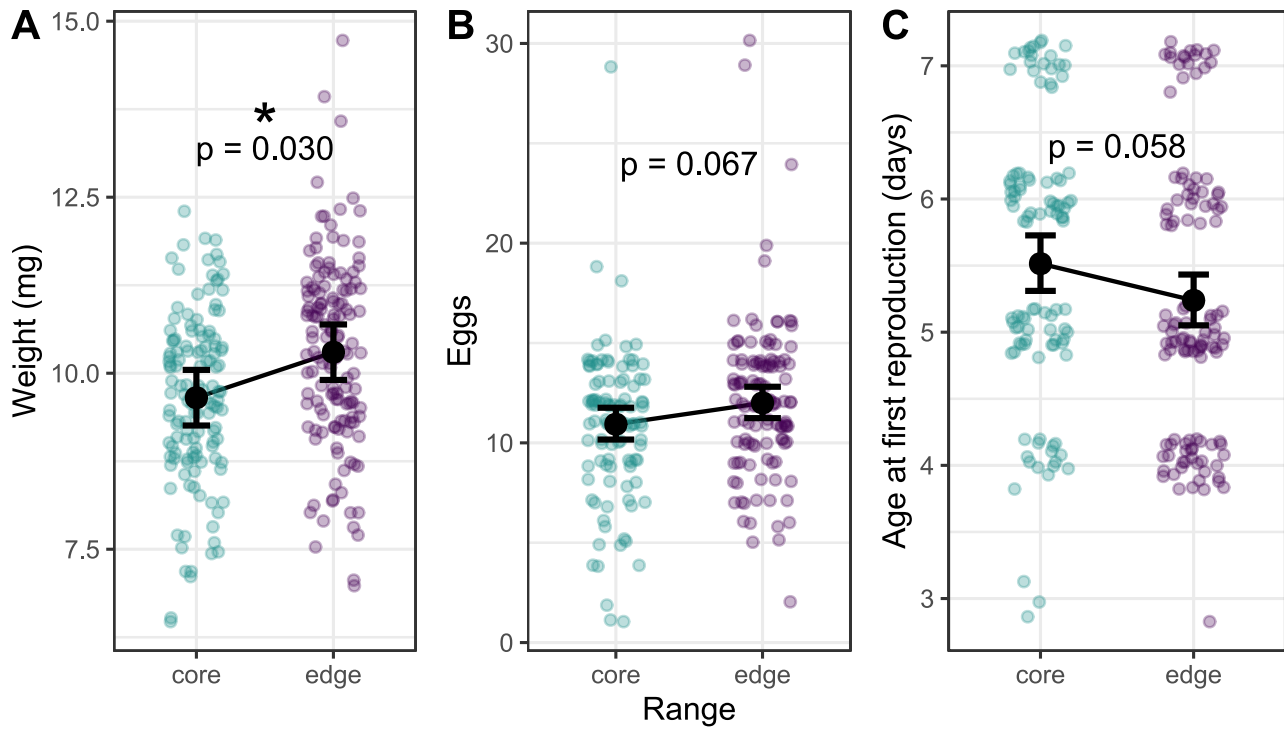
1

2 **Figure 1.** A. When selection is the dominant process during range expansion, fitness is expected to  
 3 increase in edge populations. B. When expansion load is the dominant process during range expansion,  
 4 fitness is expected to decrease in edge populations. C. Predicted interaction between density, mating  
 5 status, and range in the dispersal experiment. We expect an increase in dispersal ability of edge  
 6 populations (purple triangles are above blue circles), but dispersal ability will also be impacted by  
 7 rearing density and mating status.



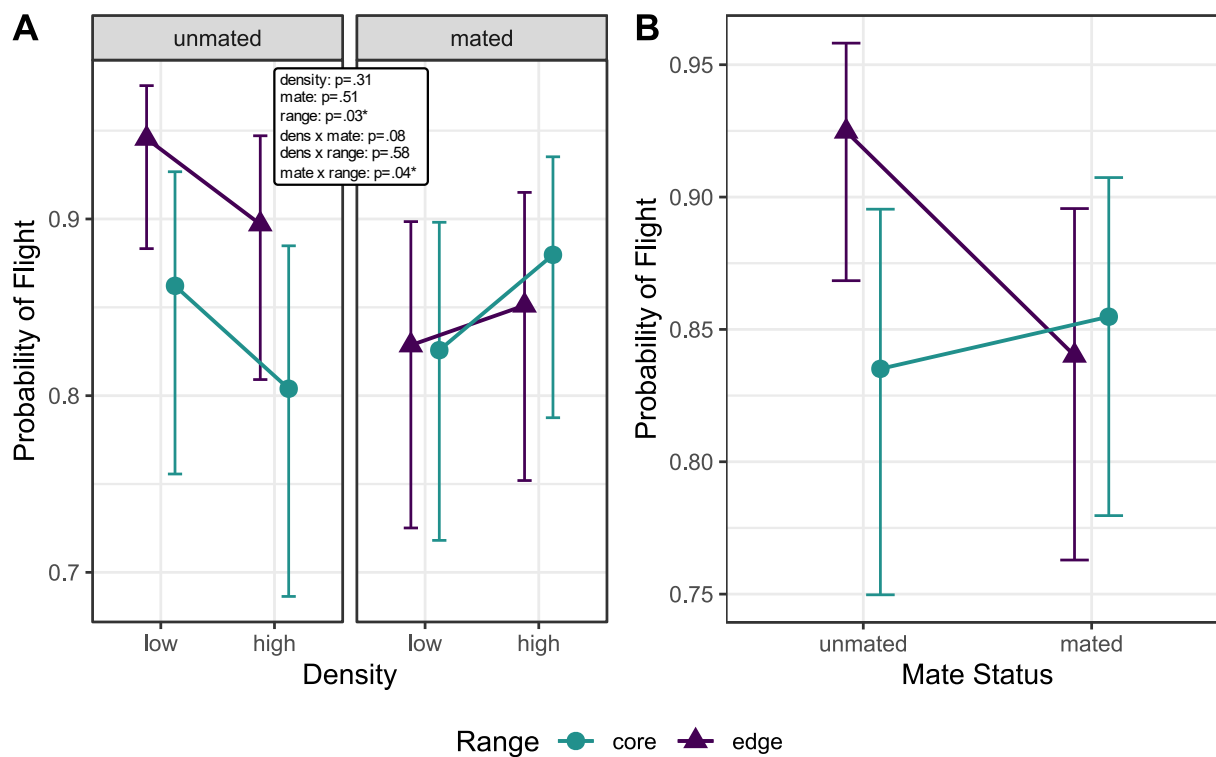
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9 **Figure 2.** Map of *D. carinulata* collection sites and range edge. Circles and triangles are collection sites  
 10 from the range core and edge, respectively, used in the life history and dispersal studies. Letters  
 11 correspond to Table S1. Small squares are approximate locations of the southern range edge in three  
 12 river drainages each year from 2010 and 2016. Range edge data are from the RiversEdge West Tamarisk  
 13 Beetle Distribution Map, available at: <https://arcg.is/1izOPW0>. Range edge points have been jittered to  
 14 show overlapping points.



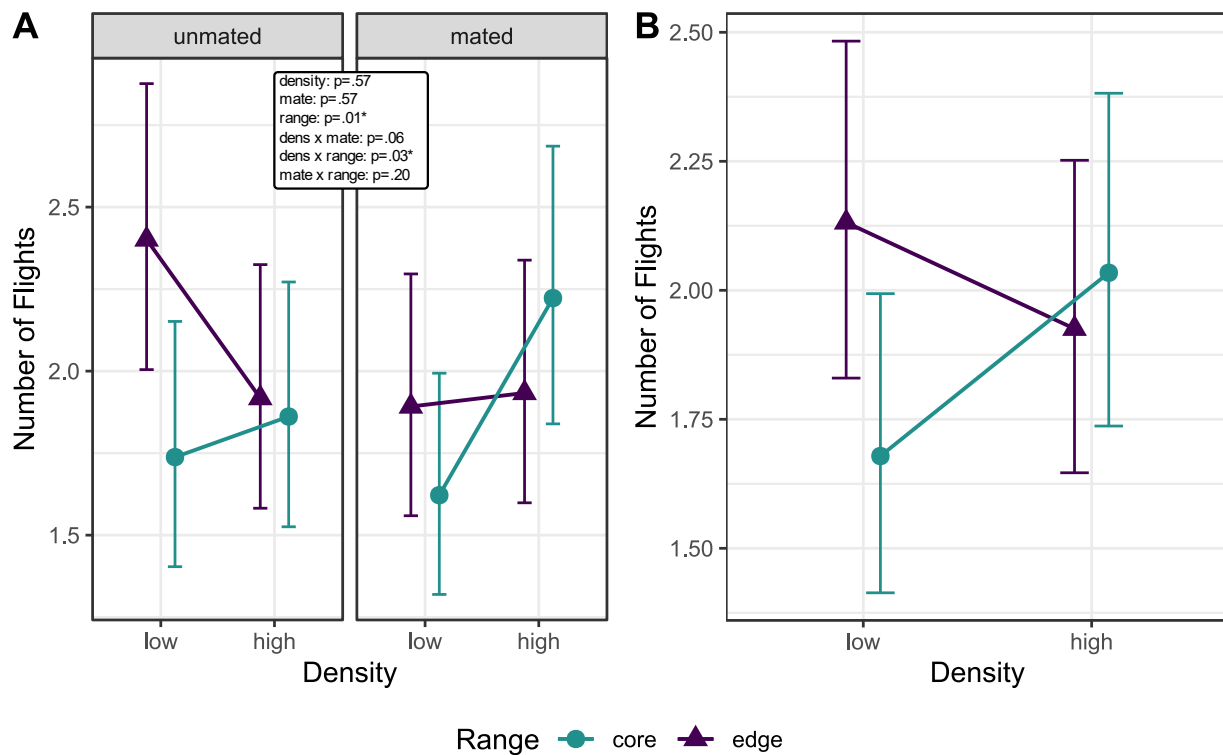
15

16 **Figure 3.** A. Weight, B. number of eggs laid in 24-hr, and C. age at first reproduction for core and edge  
 17 females. Black points and bars represent model-estimated means and 95% confidence intervals, and  
 18 colored points are all observations. In B. and C., colored points are observations from laying females  
 19 only and jittered in both the x and y directions to show individual points.



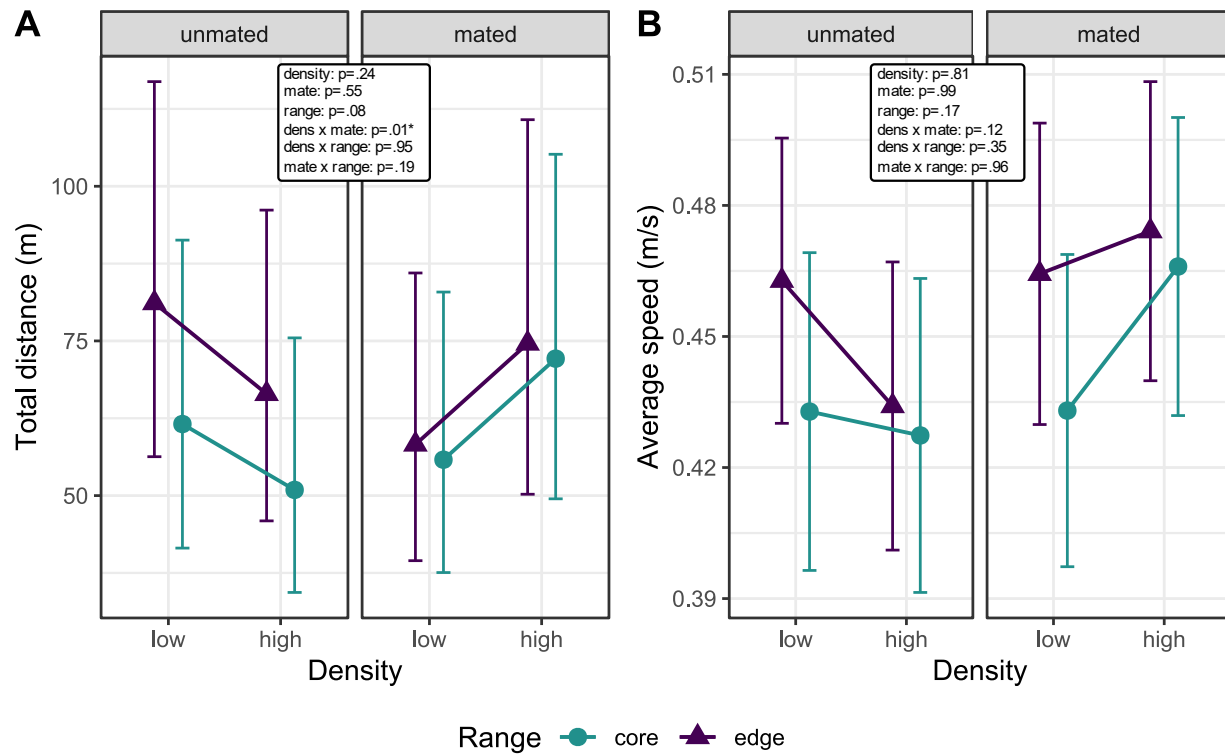
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21 **Figure 4.** Emigration potential as measured by presence of at least one flight during 1-hr trial. Points  
 22 and error bars are model estimates and 95% confidence intervals. A. Average probability of flight for  
 23 unmated and mated beetles reared at high and low density from the core and edge of the range. B. The  
 24 significant two-way interaction between range and mating status.



25

26 **Figure 5.** Emigration potential as measured by number of flights taken during 1-hr trial. Points and error  
 27 bars are model estimates and 95% confidence intervals. A. Average number of flights for unmated and  
 28 mated beetles reared at high and low density from the core and edge of the range. B. The significant  
 29 two-way interaction between range and density.



30

31 **Figure 6.** Flight ability for unmated and mated beetles reared at high and low density from the core and  
32 edge of the range as measured by A. total distance flown during 1-hr trial and B. average speed of all  
33 flights during 1-hr trial. Points and error bars are model estimates and 95% confidence intervals.