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[Abstract]: This research compares the responses of soil carbon and herbaceous plant community composition to land use intensification across vegetation-production boundaries in agro-ecosystems of southern Queensland. Samples were taken at the core and edge of patches of remnant Brigalow vegetation and at the core and edge of adjacent areas of production matrix under varying management intensities. The relationship for soil carbon across the vegetation matrix boundary resembles a step function, with no detectable difference between core and edge in the same land management category. Comparisons of plant community composition also indicate no edge effect across the boundary. Soil carbon and plant community composition were also compared across four land management categories, including; 1) Brigalow vegetation, 2) uncultivated grassland, 3) previously cultivated grassland, and 4) current cultivation. Significant differences were found between all categories for both measured variables, with the exception of soil carbon in currently and previously cultivated areas. The usefulness of these variables as potential indicators of ecosystem functioning in highly fragmented and modified agricultural landscapes is considered.