1083-14-136   **Corey Irving***, Department of Mathematics and Comp. Science, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053. *Wachspress Varieties.* Preliminary report.

We examine a variety defined using barycentric coordinates of polygons. Barycentric coordinates express the points of a polygon as convex combinations of the vertices, and are frequently used in geometric modelling. For an N-gon they are a collection of N functions on the polygon. We focus on one type of barycentric coordinates, Wachspress coordinates, that are rational functions. Wachspress coordinates thus define a rational map to $\mathbb{P}^{N-1}$. We study the Zariski closure of the image of this map and describe its defining equations in terms of properties of the polygon. (Received August 25, 2012)