The introduced Woodland Crayfish (*Orconectes hylas*) is spreading throughout the St. Francis River, Missouri. The imperiled Big Creek Crayfish (*Orconectes peruncus*) and St. Francis River Crayfish (*Orconectes quadruncus*) are often extirpated from locations where *O. hylas* establishes. The goal of my study was to find evidence that explains how *O. hylas* displaces either of these natives and provide managers with potential conservation actions to ensure their persistence. Investigation of associations among natural and anthropogenic factors at a coarse-spatial scale with the distributions of *O. hylas*, *O. peruncus*, and *O. quadruncus* was done using classification trees. *Orconectes hylas* was not positively associated with anthropogenic alterations, suggesting that it is not taking advantage of stressed aquatic environments to establish and replace native crayfishes. The most highly associated natural factors for all three species related to either soils or geology. Fine-scale habitat use of *O. hylas* and *O. quadruncus* was assessed by tracking uniquely tagged adult crayfish and measuring habitat characteristics. Both species used a wide range of habitat conditions, but slow water and coarse substrate particles were the most highly selected attributes. *Orconectes quadruncus* selected the slowest water, but there were no other significant differences in the habitat selection between species. A monitoring framework was developed based on occupancy estimation to determine the status of *O. peruncus*, *O. quadruncus*, and *O. hylas*. The results of my study were discussed in a theoretical and applied format that considers both specific conservation actions to address the study species and also crayfish conservation in general.