Crayfish in Ohio
The state of Ohio possesses 26 decapod crustaceans
   24 crayfish        2 shrimp

Distribution factors

Three preglacial river systems strongly influenced the current distribution patterns observed in Ohio
   Allegheny River   Teays River   Ohio River

Ohio-Erie canal and bait buckets have played a role in the dispersal of *O. rusticus*

A low relief, swampy, glacial till plane (known as the Prairie Peninsula) south of current day Lake Erie was utilized by four burrowing species
   *P. acutus, C. diogenes, O. immunis, F. fodiens*

Five species have unique dispersals that utilized the Ohio River, Great Lakes, and/or human introduction

Bedrock geology influences some east-west distribution patterns

Crayfish provide an important perspective on diversity and its points of origin since they do not disperse rapidly in the presence of other competing species.
Preglacial Ohio

Approximately 300 MYBP to 1.5 MYBP
Eastern, Preglacial Allegheny patterns

On the eastern margin of Ohio, *Cambarus carinirostris* and *Orconectes obscurus* still hold sway in the Flushing Escarpment (red area of maps). This is, in part, the unglaciated portion of the preglacial Allegheny River system. It has been postulated that the preglacial Allegheny River flowed northward and through the area of the present St. Lawrence River to the Atlantic Ocean (Ortmann, 1906).
Central, Preglacial Teays River patterns

Five species in Ohio were preglacial Teays River inhabitants, two from the genus Orconectes and three from Cambarus. All five species presently have distributions centered in central Ohio. Two newly described species have been added to the list.

- **C. b. cavatus**
- **C. sciotensis**
- **C. thomai**
- **O. cristavarius**
- **O. sanbornii**
- **Orconectes raymondi**
- **Cambarus theepiensis**
Western, Preglacial Ohio River patterns

Five Ohio species are associated with the preglacial Ohio River basin, two *Orconectes* and three *Cambarus*. All but one species is still found on the western edge of Ohio.

*Orconectes rusticus*
Northern, Prairie Peninsula patterns

Four species in Ohio utilized Prairie Peninsula as a dispersal route into Ohio. The Prairie Peninsula developed south of Lake Erie after glacial retreat during a period of low rainfall. At this time, numerous wetland and swamp-like environments existed on the glacial plains of Ohio. All four species are known to burrow in wetlands.
Other dispersal patterns

Five other Ohio species display their own individual dispersal patterns.

- *Macrobrachium ohione*
- *Palaemonetes kadiakensis*
- *Orconectes propinquus*
- Gulf of Mexico
- Mississippi River
- Canadian/Great Lakes
Introduced species.

*Orconectes virilis*

*Procambarus clarkii*
How to identify Ohio crayfish
Identifying the Sexes of North American Freshwater Crayfishes

**MALE**
(Ventral Side)

- Head End
- Tail End

**FEMALE**
(Ventral Side)

- Head End
- Tail End

Mesial view of first pleopod.

First pair of pleopods or gonopods.

Annulus Ventralis
Orconectes obscurus

Orconectes sanbornii

Orconectes propinquus
Orconectes sloani

Orconectes cristavarius

Orconectes raymondi
Cambarus thomai

Cambarus polychromatus

Fallicambarus fodiens

Cambarus diogenes

Cambarus thomai
Figure 10.—Generalized crayfish burrows: a, d, those of primary burrowers; b, that of secondary burrower; c, e, those of tertiary burrowers.
Cambarus ortmanni

Cambarus b. cavatus

Cambarus carinirostris
Cambarus tenebrosus

Cambarus robustus

Cambarus sciotensis
www.crayfishworld.com
- Crayfish & Shrimp of Ohio

www.crayfishstudies.com