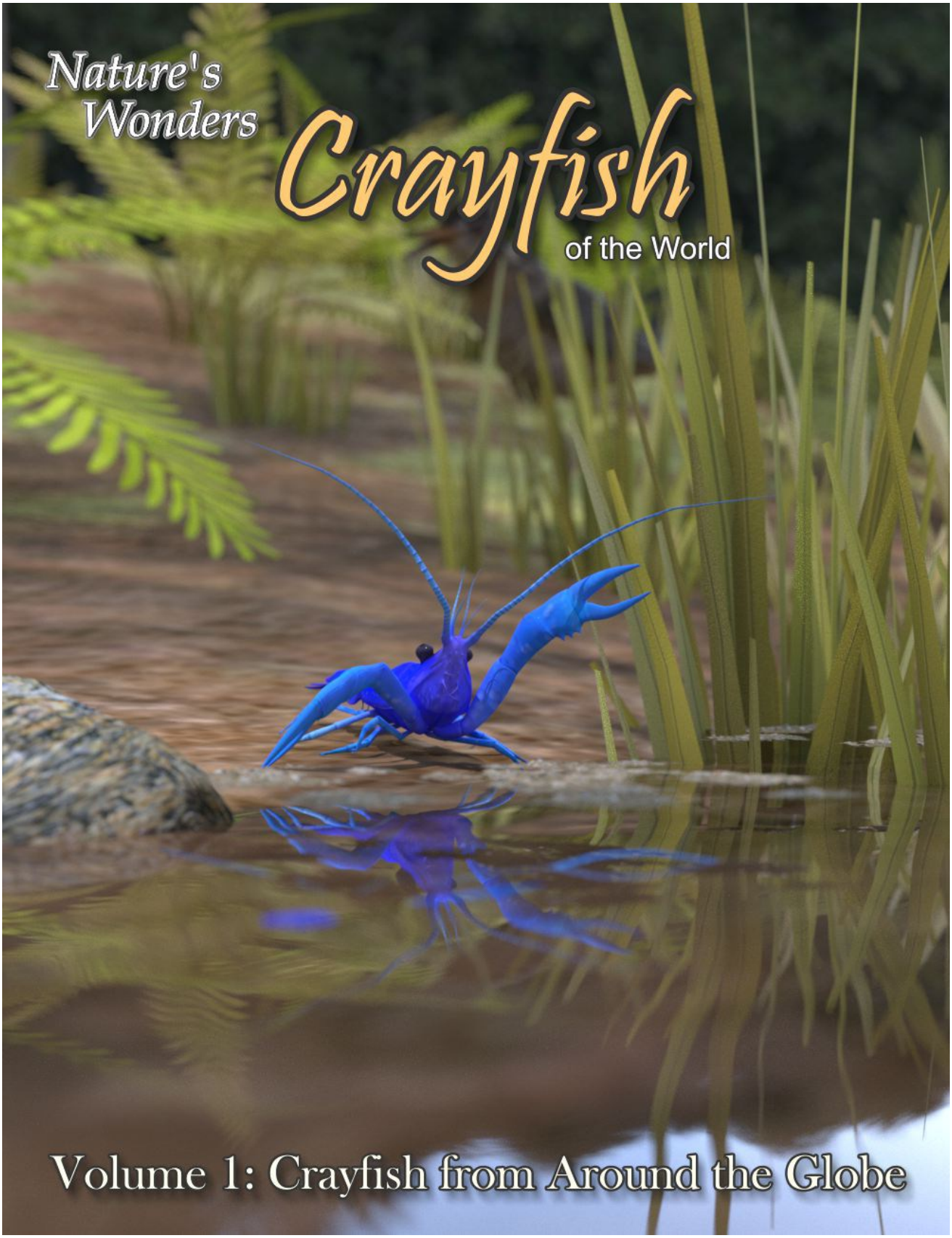


3D model set by Ken Gilliland

Nature's Wonders

Crayfish of the World

Volume 1

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Introduction

Crayfish, crawfish, or crawdads are freshwater crustaceans belonging to the infraorder *Astacidea* (which also contains lobsters). They breathe through feather-like gills. Some species are found in brooks and streams, where fresh water is running, while others thrive in swamps, ditches, and paddy fields. Most crayfish cannot tolerate polluted water, although some species, such as Procambarus clarkii, are hardier. Crayfish feed on animals and plants, either living or decomposing. The term "crayfish" is applied to saltwater species in some countries.

This add-on set includes six species of crayfish found throughout the world. It includes common and popular crawdads such as the Blue from the Florida everglades to the rare and elusive Mexican Dwarf Orange Crayfish. Also is included is the denizen of the billabongs, the Australian Red Claw, as well as the Common Yabby. The tiny Texan Brazos Dwarf Crayfish and Marmorkrebs finish off the set.

It comes in both Poser and DAZ Studio native versions and support Firefly, Superfly and Iray render engines.

Overview and Use

This set uses a common model to digitally recreate the crayfish species included in this volume. Each species uses specific morphs from the generic model to single-out its unique features. **The BASE model is not included in this set and must be purchased separately.**

The set is located within the **Animals : Nature's Wonder** folder. Here is where you will find a number of folders, such as **Manuals, Resources** and **Fauna Libraries**. Let's look at what is contained in these folders:

- **Fauna Libraries:** This folder holds the actual species and poses for the "premade" fauna. The fauna for this set can be found in the following folder(s):
  - **Crustaceans / Crayfish of the World**
- **Manuals:** Contains a link to the online manual for the set.
- **Props:** Contains any props that might be included in the set
- **Resources:** Items in this folder are for creating and customizing your fauna included in the set

Creating a Specific Crayfish using Poser

1. For this example, we'll create the Red Swamp Crayfish.
2. Load Poser, select the FIGURES library and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Crustaceans folder.
3. Go to the Crayfish of the World folder and select the Firefly or Superfly sub-folder.
4. Select the Red Swamp Crayfish (or a Crawdad of your choice) and load it by clicking the mouse.

Creating a Specific Crayfish using DAZ Studio

1. For this example, we'll create the Red Swamp Crayfish.
2. Load DAZ Studio and go to the "Animals", "Nature's Wonders" and then the Nature's Wonders Fauna Libraries Crustaceans folder.
3. Go to the Crayfish of the World folder and select the Iray sub-folder.
4. Select the Red Swamp Crayfish (or a Crawdad of your choice) and load it by clicking the mouse.

Using the Poses

The poses were designed for the default model. The base or "hip" section of the model is **Carapace3**. The poses were designed for the default base model. Since individual species may use different body and leg scaling, it may alter the expected ground level of the species model or its legs. Some adjusting may be necessary such as using the "ytran" dial to raise or lower the model or the Up-Down commands on the individual legs to raise or lower them to the desired heights.

Superfly and Displacement

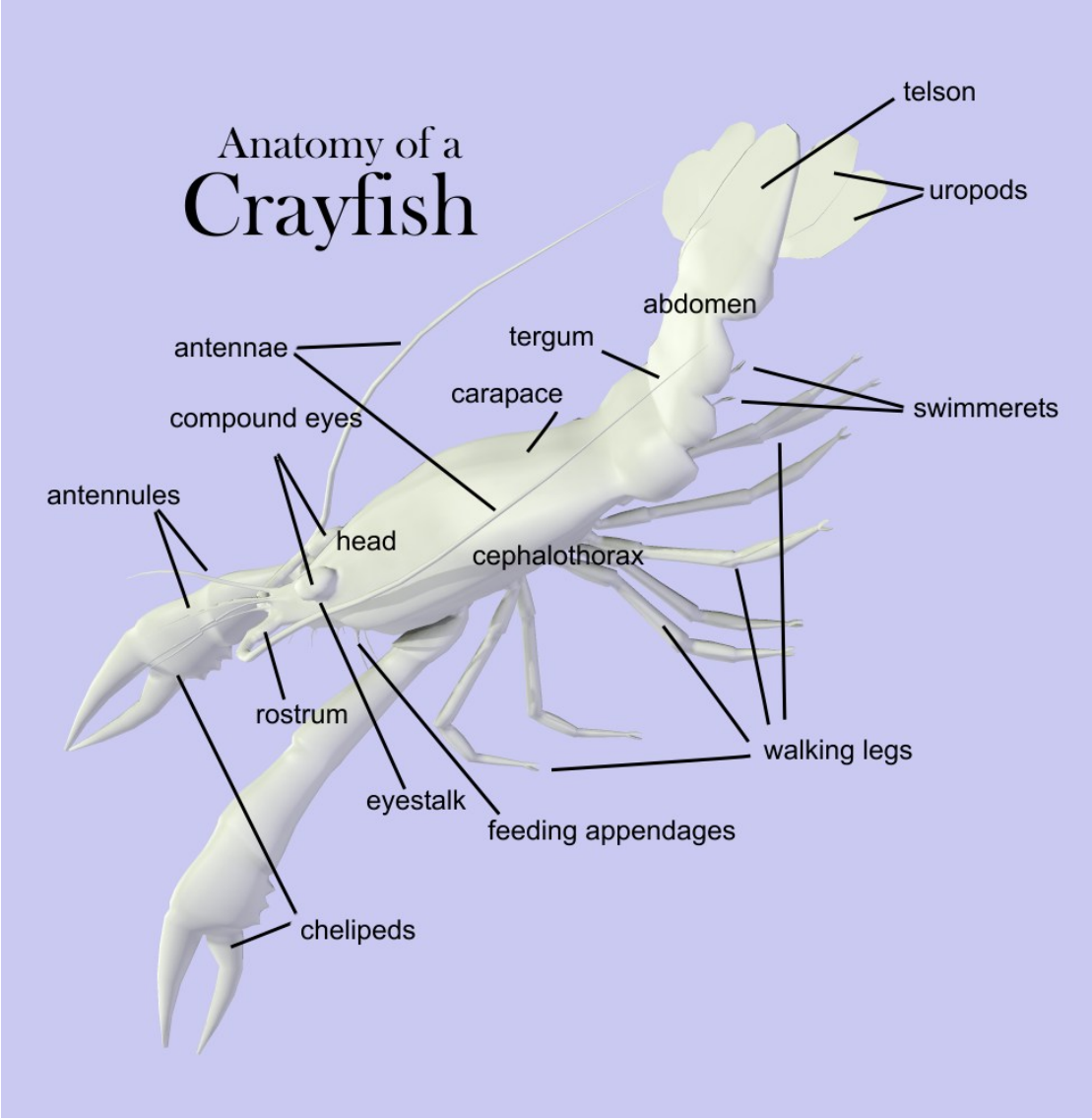
The crayfish model on certain species uses fairly heavy displacement. Unfortunately, displacement is something that the Superfly render engine does not do well, even with additional subdivison on the model. In my own work, I have had to trade off displacement with usability on this set when using Superfly. I suggest sticking with the Firefly render engine for the best results in Poser.

Nature's Wonders

Crayfish of the World

Volume 1

FIELD GUIDE



About Crayfish

The name "crayfish" comes from the Old French word, *écrevisse*. The word has been modified to "crayfish" by association with "fish" (folk etymology). The largely American variant "crawfish" is similarly derived.

Some kinds of crayfish are known locally as lobsters, crawdads, mudbugs, and yabbies. In the Eastern United States, "crayfish" is more common in the north, while "crawdad" is heard more in central and southwestern regions, and "crawfish" farther south, although considerable overlaps exist.

The body of a decapod crustacean, such as a crab, lobster, or prawn (shrimp), is made up of twenty body segments grouped into two main body parts, the cephalothorax and the abdomen. Each segment may possess two pairs of appendages, although in various groups, these may be reduced or gone. On average, crayfish grow to 17.5 cm (6.9 in) in length. Walking legs have a small claw at the end.

The greatest diversity of crayfish species is found in southeastern North America, with over 330 species in 15 genera, all in the family *Cambaridae*. A further genus of *astacid* crayfish is found in the Pacific Northwest and the headwaters of some rivers east of the Continental Divide. Many crayfish are also found in lowland areas where the water is abundant in calcium, and oxygen rises from underground springs. Crayfish are also found in some non-coastal wetlands; eight species of crayfish live in Iowa, for example.

Crayfish are opportunistic omnivorous scavengers, with the ability to filter and process mud. In aquaculture ponds using isotope analysis they were shown to build body tissue selectively from the animal protein portion of pelleted food and not the other components of the pellet.

They have the potential to eat most foods, even nutrient poor material such as grass, leaves, and paper, but can be highly selective and need variety to balance their diet. The personalities of the individual crayfish can be a key determinant in the food preference behavior in aquaria.

Crayfish all over the world can be seen in an ecological role of benthic dwellers, so this is where most of their food is obtained – at the sediment/ water interface in ponds, lakes, swamps, or burrows. When the gut contents are analyzed, most of the contents is mud: fine particulate organic matter (FPOM) and mixed particles of lignin and cellulose (roots, leaves, bark, wood). Some animal material can also be identified, but this only contributes a small portion of the diet by volume.

Dwarf Orange Crayfish *Cambarellus patzcuarensis*

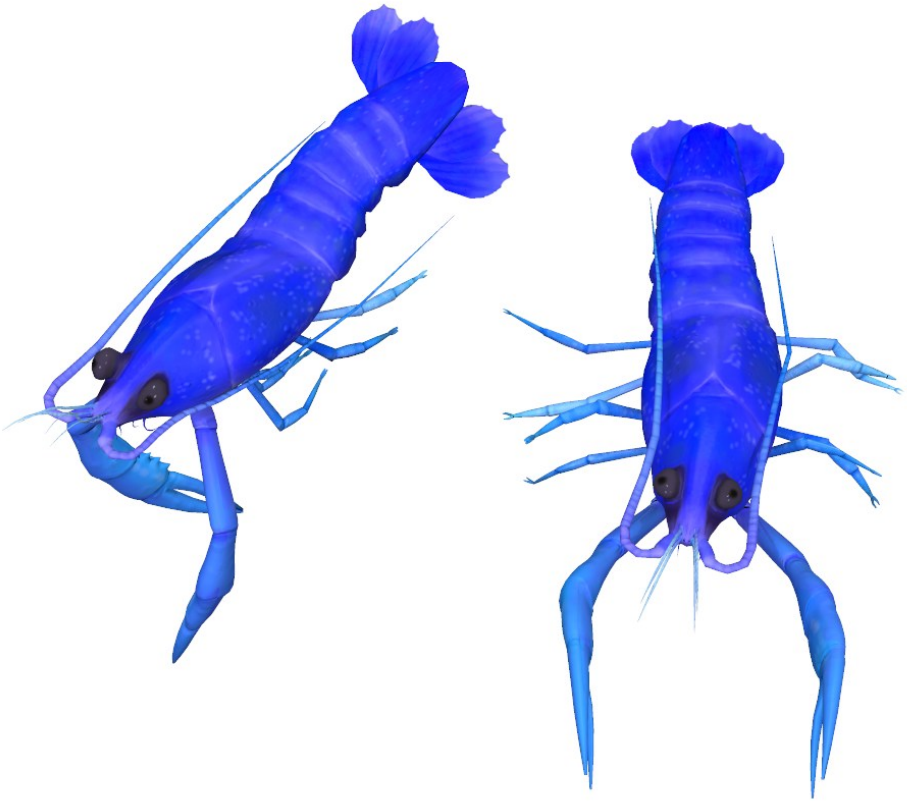
It is a small, threatened species of crayfish in the family Cambaridae. It is endemic to Michoacán in Mexico and often kept in aquariums.



It measures 4–5 cm (1.6–2.0 inches) in total length, including claws. Most specimens found in the wild are brown, sometimes with a gray or blue tint. The "Orange" (Mexican dwarf crayfish, sometimes Mexican dwarf orange crayfish) is an orange-colored mutation often held in aquariums, but this form is rarely found in the wild.

Blue Crayfish *Procambarus alleni*

The Everglades crayfish, sometimes called the Florida crayfish, the blue crayfish, the electric blue crayfish, or the sapphire crayfish, is a species of freshwater crayfish endemic to Florida in the United States. Its natural range is the area east of St. Johns River and all of Florida from Levy County and Marion County southwards, as well as on some of the Florida Keys. It is included on the IUCN Red List as a species of Least Concern. The blue crayfish is frequently kept in a freshwater aquaria. In the wild, this species varies from brown-tan to blue, but an aquarium strain has been selectively bred to achieve a brilliant cobalt blue color.



Blue Crayfish are average size for crayfish species, growing up to 10–12 cm (4–5 inches) in length. However, there are reports that in the wild some individuals can measure up to 18 cm (7 inches).

Blue Crayfish come from freshwater marshes, ditches, streams, wetlands, and flood plains that are primarily found in Florida, south of the panhandle. Though they have also been found in California, France, and Germany, these are believed to be colonies introduced from aquariums.

They live in water with little to no movement. But they can survive extended dry periods by burrowing in sand, mud, or clay to stay hydrated.

Marmorkrebs *Procambarus fallax*

It is also known as the “Deceitful” or “Slough” crayfish and is a species of crayfish in the genus Procambarus. It lives in tributaries of the Satilla River in Georgia and Florida.



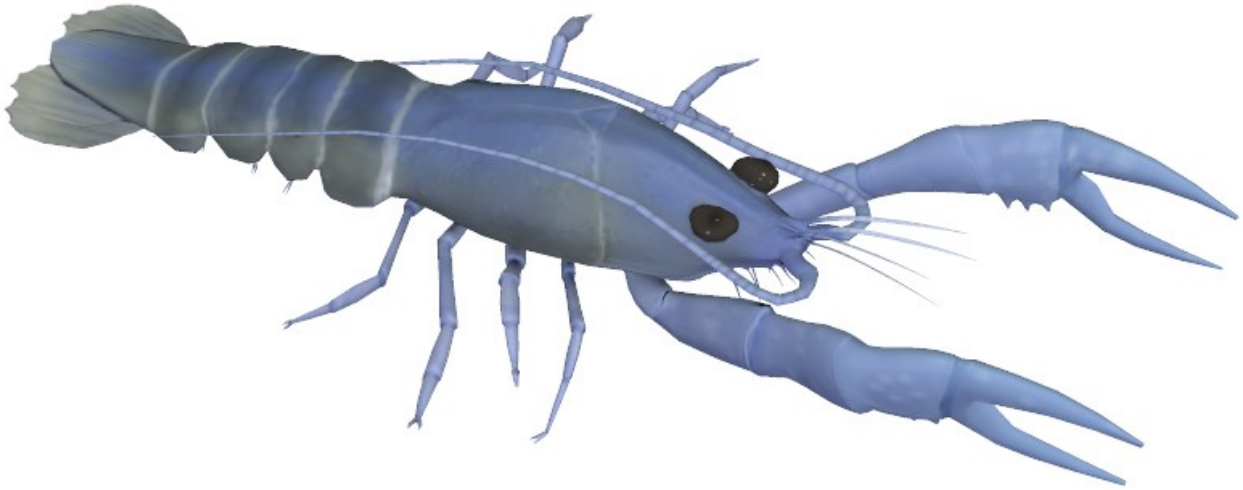
It features a brownish carapace with darker splotches, a faint light stripe down the center, dark stripes on the upper sides, and a maximum total length of about 68 mm (2.7 inches).

It is found in slow-moving streams, sloughs, and wetlands; it is a resilient species capable of handling low oxygen levels and environmental shifts.

Common Yabby *Cherax destructor*

The Common Yabby is an Australian freshwater crustacean in the Parastacidae family. It is listed as a vulnerable species of crayfish by the International Union for Conservation of Nature (IUCN), though the wild yabby populations remain strong, and have expanded into new habitats created by reservoirs and farm dams.

Yabbies are on average 10–20 cm (4–8 inches) in length, but have been shown to grow to lengths of up to 30 cm (12 inches).



It has a smooth shell with one pair of post-orbital ridges. It does not have a spine on the shoulders behind the cervical groove (region that separates head from thorax). Females have a reduced growth rate after maturity which usually means that they are smaller in size compared to their male counterparts.

Color can be highly variable and depends on water clarity and habitat. Yabbies can range from black to blue-gray to dark brown in clear waters or light brown to green-brown, or even beige in muddy waters. They are specifically bred to be a vibrant blue color in the aquarium trade in Australia.

Australian Red Claw Crayfish *Cherax quadricarinatués*

It is native to permanent freshwater streams, billabongs and lakes on the north coast of the Northern Territory, northeastern Queensland, and Papua New Guinea. Through translocation by humans, the range has spread down to southern Queensland and into the far north of Western Australia, where it is outcompeting the local crayfish species. It is considered an invasive species, and has established feral populations in South Africa, Mexico, Jamaica, Puerto Rico, Indonesia, Zambia, Malaysia and Singapore]



This tropical crustacean is very tolerant of environmental changes, and is primarily a detritivore (an organism that obtains nutrients and energy by physically ingesting and digesting decomposing plant and animal parts, as well as fecal matter).

It ranges from dark brown to blue-green. Their heads have four keels (as inferred by the epithet), and adult males have a distinct red patch on the outer margin of the claws. They can reach up to 30 cm (12 inches) and 600 grams (21 oz).

Brazos Dwarf Crayfish *Cambarellus texanus*

This is a freshwater crayfish native to Texas. Brazos Dwarf Crayfish inhabits ditches with standing water with lots of plants and will burrow when the habitat becomes dry.

It is a small crayfish only reaching a maximum size of 3 cm (1.5 inches).

The abdomen has a pale olive ground color, and there is a middorsal stripe lighter than the ground color and outlined by a dense stripling. A clearly visible dark spot is located in the center of the tail. Their bodies are also covered with tiny dots that have a lot of pattern and color variations.



The lifespan of Brazos Dwarf Crayfish is only about 1.5 – 2 years but they have been known to live even a little bit longer under optimal conditions.

Special Thanks to…

….my betatesters Alisa and FlintHawk

Species Accuracy and Reference Materials

The author-artist has tried to make these species as accurate to their real life counterparts as possible. Crayfish of the same species vary considerably, as do all other animals in nature. These Crayfish were created using the correct field markings and the most common similarities.

With the use of one generic model to create dozens of unique Crayfish species, some give and take is bound to occur. In addition, 3D-models have many technical challenges, which make exact representations difficult, if not impossible. It's best to think of these Crayfish represented as resembling the particular species, and they may not, in some cases, be 100% scientifically accurate.

The model and morphs were created using Luxology's Modo. The texture maps were created in Corel's Painter. The model was rigged and materials were created in Smith-Micro's Poser and DAZ's DAZ Studio.

Internet Sources:

- **Wikipedia** (http://www.wikipedia.com)
- **American Crayfish Atlas** (https://americancrayfishatlas.web.illinois.edu/)
- **USGS** (https://nas.er.usgs.gov/)
- **Aquarium Breeder** (https://aquariumbreeder.com)