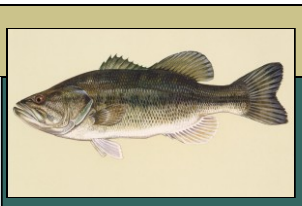
Fish Monitoring via Electrofisher



D Raver, US FWS

Division Electrofishing Boats

Big electrofisher used for sampling striped bass in the Delaware River.

Pond & tidal river unit

Raft shocker used in shallow areas with limited access.

For more information on fish sampling contact:

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There are many gears available for sampling fish populations. The type of gear used depends on: species of fish being collected, habitat to be sampled, time allotted, size of fish sought, and staff. Many species such as largemouth bass, sunfish, striped bass, and some stream fishes can be most easily and safely collected by electrofishing. Although most fish close to the electrofisher are stunned, only those being targeted are collected, while the others recover in the water without being impacted by any handling.

On the Division's electrofishing boats, a generator is hooked to an electrofishing box which has a rheostat for variable voltage, a second timer, and a pulse-width adjustment. Cathodes or negative current outlets hang along the sides of the boat or the metal boat (big electrofisher) serves that purpose. The anode hoops (positive current) hang on booms in the front. When the operator pushes down on the foot pedal on the bow, current flows into the water and stuns fish around the boat. Fish are attracted to the anodes in the front. When stunned, most fish roll upside down momentarily revealing the light-colored belly.

At that point, the fish is usually seen, identified, and collected by a netter on the bow. Water visibility and experience of the crew have a great impact on catches. If the fish is too deep to be seen – like most catfish, it floats under the boat and recovers. Often the fish are stunned for a very short period of time and can swim off before the netters can get them. Some species, such as chain pickerel, often move away from the area before the boat gets close enough to stun them. This is why an electrofishing unit is not the best gear to use in all situations.

The Division also has a backpack electrofishing unit for use in wadeable streams. It is either battery powered or uses a small generator for safety and is operated by a crew of two, each carrying a long-handled "wand" with a hoop electrode on the end. A button on the wand handle is used to turn the current on and off. Other gears used in fish monitoring activities include: beach seines, gill nets, trap nets, fyke nets, and trawls. Electrofishing is only effective in fresh water. Our units cannot be used much downstream of the Delaware Memorial Bridge for that reason.

Dipping up largemouth bass in Broad Creek & transferring to the aerated livewell.