

Sharks and Rays: Myth and Reality

Week 4

Lateral Line System of Freshwater Stingray

Dr. Marcelo Carvalho: Using a freshwater stingray —this is *Potamotrygon falkneri* from the Paraná Basin in Brazil —we can demonstrate another interesting aspect of sharks and rays, which is the lateral line system.

The lateral line is one of the main sensory systems in sharks and rays, as with bony fishes in general. It is composed of a system of pores connected to a small canal that runs around the head, around the sense organs of the head, and down the length of the body. Water enters these pores and stimulates small nerves that are located at the base of hair cells within the lateral line itself.

To demonstrate the lateral line system, we first have to remove the skin. This has been done in this specimen. If I pull away the skin, we can see the system of canals underneath the skin, which is the lateral line.

This is the main canal. It is connected to smaller tributaries that branch off toward the extremity of the

disk (the central portion of the body). The pores are actually located along the disk extremity.

Turning the specimen over towards its ventral side and removing the skin, we can see the general pattern of the lateral line much better. Here you can see that it basically moves down along the disk and then branches back up.

An animal with the lateral line is capable of detecting water vibrations at a distance of sometimes 200 meters away.