

**DEPARTMENT OF AGRICULTURE AND FOOD SUPPLY
SÃO PAULO STATE AGENCY FOR AGRIBUSINESS TECHNOLOGY
FISHERIES INSTITUTE
GRADUATE PROGRAM**

**FISHERIES INSTITUTE INFRASTRUCTURE USED BY THE GRADUATE
PROGRAM**

1. Presentation

The Fisheries Institute is a scientific research institution linked to APTA (São Paulo State Agency for Agribusiness Technology), part of the Department of Agriculture and Food Supply of the State of São Paulo. Established on April 8, 1969, it represents the continuity, at a more advanced and specialized level, of work involving fishing and aquaculture. In this context, the Institute was the first research organization in the country to present an organizational chart with responsibilities focused on the study of aquatic ecosystems and the biology of organisms in inland and marine waters. In aquaculture, the Institution was one of the first in the country to conduct research on the cultivation of trout, tropical fish, freshwater shrimp, frogs, and mollusks.

The Institute is dedicated to the development of technologies related to fishing and aquaculture, with a primary focus on the responsible use of natural aquatic resources and the improvement of quality of life. Its main characteristics include conducting research on fishing and aquaculture, food security, and environmental protection; contributing to the management, conservation, and environmental education in the field of fishing and aquaculture.

The strategic objectives of the Fisheries Institute align with four of the nine strategic objectives of the State Government of São Paulo, with activities in 11 programs, such as: 1. Economic development promoting investment, innovation, tourism, and the creative economy; 2. Social development ensuring individual and collective rights and promoting full autonomy. 3. Competitive agriculture strengthening production standards and sustainable consumption; 4. Sustainable development preserving the environment and protecting the

population from natural disasters, approved by Bill No. 924, dated August 15, 2019.

The main responsibilities of the Fisheries Institute are:

- Conducting basic and applied research on aquatic fauna and environments, aiming to increase their productivity and rational exploitation;
- Guiding the stocking and restocking of inland waters of the State with recommended species;
- Encouraging fishing activities, providing guidance, developing techniques, and cooperating in human resource development.

2. Mission

To generate, adapt, disseminate, and transfer scientific and technological knowledge for agribusiness in the fishing and aquaculture sector, aiming at the rational use of living aquatic resources and improving quality of life. The Fisheries Institute has a wide distribution of research centers and several laboratory units spread throughout the state of São Paulo.

Geographical Distribution of the Fisheries Institute

The Fisheries Institute has four Research Centers (Figure 1):

- Aquaculture Research Center
- Water Resources Research Center
- Advanced Marine Fish Research Center
- Advanced Continental Fish Research Center



QUATRO CENTROS DE PESQUISA

Figure 1 - Geographical distribution of the Fisheries Institute throughout the State of São Paulo

Aquaculture Research Center

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This Center includes the following units:

- **Reference Laboratory Unit in Aquatic Organism Pathology and Quarantine** for aquatic organisms, located in the City of São Paulo (Figure 2).

The Aquatic Organism Pathology Laboratory not only conducts research but also provides services to the community in areas such as bacterial diseases, comparative ecopathology, aquatic organism hematology, comparative histopathology, ichthyoparasitology, sanitation management, and aquatic toxicology. The unit has three laboratories for biological assays and three others for analyses (microscopy, bacterial necropsy), all properly equipped to conduct experiments and provide services.



Figure 2 - Aquatic Organism Pathology Reference Laboratory and Quarantine for aquatic organisms

- **Pirassununga Research and Development Unit** conducts research on tilapia farming and freshwater shrimp farming. The **Campos do Jordão Research and Development Unit** is a pioneer in trout farming techniques in Brazil (Figure 3).

Unidades de Pesquisa de Pirassununga e Campos do Jordão



Figure 3 - Pirassununga and Campos do Jordão Research and Development Units

Water Resources Research Center

This center includes the following unit:

- The Limnology Reference Laboratory has a tradition in physical, chemical, and biological analyses of water, enabling assessments of the aquatic ecosystem, ranging from environmental diagnostics to the implementation and monitoring of aquaculture activities. Currently, the unit has various equipment such as: microscopes of various types (binocular, bright field, inverted, etc.), incubators, autoclaves, furnaces, laminar flow hoods, laboratory microwaves, analytical balances of different precisions, gas chromatograph, mercury analyzer by fluorescence, multi-sensor limnological parameters (pH meters, conductivity meters, oxygen meters, and turbidimeters), among others (Figure 4).

Centro de Pesquisa de Recursos Hídricos



Figure 4 - Limnology Reference Laboratory

Advanced Marine Fish Research Center

This center includes the following laboratory units:

- Fish Technology Laboratory Unit;
- Mariculture Laboratory Unit;

The Mariculture Laboratory Unit, along with the bases located in Ubatuba and Cananéia, are properly equipped for the development of their activities, mainly focusing on the reproduction and larviculture of marine organisms, breeding and fattening in sea cages, in closed systems with water recirculation, cultivation of food organisms, and other activities necessary for the process of raising marine organisms. Notable equipment includes various types of scales, pumps for seawater, radial blowers equipped with timers, microphotographic image analyzers, germination chambers, autoclaves, incubators, equipment for preparing feed, water distiller, optical equipment, lux meters, refractometers, auxiliary electricity generators with a capacity of 10KWA.



Litoral Sul– Núcleo de Pesquisa
em Cananéia - SP



Litoral Norte- Núcleo de Pesquisa
em Ubatuba - SP

Figure 5 - Advanced Marine Fish Research Center headquartered in Santos and Research Centers in Ubatuba and Cananéia

Advanced Continental Fish Research Center

This center includes laboratory units for water quality analysis and an experimental feed factory.



Viveiros Experimentais, Laboratório de Análises de Qualidade de Água e Fábrica Experimental de Ração

Figure 6 - Advanced Continental Fish Research Center

In this center, research is conducted on reproduction and larviculture, nutrition and feeding, limnology, aquatic organism health, genetic improvement, processing of aquaculture by-products, and socioeconomic evaluation of the activity. Projects developed in partnership with universities, municipalities, rural producers, and associations aim to diagnose the central-west region, with a view to establishing regional public policies; monitoring reservoir water quality to

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define aquaculture parks; surveying the parasitological status of the ichthyofauna of major crops to define research lines on aquatic organism treatment; fully utilizing fish with an emphasis on processing by-products for use in the human and animal food and pharmaceutical industries, and evaluating foods with potential use in aquaculture.