



**Iranian Fisheries Science Research Institute**  
**Iran Shrimp Research Center (ISRC)**

**Vision**

Study and research on sustainable exploitation of marine shrimp resources and increase the efficiency of farmed shrimp production towards food security and reduce investment risk.

**History**

Iran Shrimp Research Center was established in ۱۹۷۷ under the name of Persian Gulf Fisheries Research and Development Centre (PGFRDC). PGFRDC is the oldest fisheries research center in Iran, which is located in Bushehr province. The research activities of this center began with the regional plan of "Assessment of Persian Gulf benthic fish stocks" in cooperation with the six countries bordering Persian Gulf, and FAO. Since ۱۹۷۹, the PGFRDC was renamed as "Persian Gulf Fisheries Research Center (PGFRC)" and its researches focused on shrimp. To date, more than ۳۵۰ research projects and plans have been conducted on the assessment of stocks, biology and aquatic ecology, shrimp aquaculture, and contaminants of water resources. Using these research

achievements, the scientific management of aquatic resources in the Iranian waters of the Persian Gulf was implemented. In ۱۹۸۴, for the first time in the region, green tiger shrimp (*Penaeus semisulcatus*) was successfully reared on a laboratory scale in the Bandargah research station. Along with the development of shrimp aquaculture industry in Iran and according to the approach of specialization of fisheries research, with approval of the Ministry of Science, Research and Technology, it was renamed as "Iran Shrimp Research Center" in ۲۰۰۳.

**Facilities**

**Laboratories**

To conduct the researches, the ISRC has a total of ۹ laboratories, as follows, for identification and testing:

- \* Aquatic Biometry
- \* Benthos and Sediment
- \* Histopathology
- \* Marine Pollution
- \* Microbiology
- \* Molecular Genetic
- \* Plankton
- \* Physico-chemical oceanography

\* Phycolab

Molecular Genetic, histopathology and plankton laboratories are certified and accredited according to ISO/IEC ۱۷۰۲۵ by National Accreditation Centre of Iran.



**Aquatics Museum:**

The museum holds a large collection of the Persian Gulf and Oman sea aquatic animals including ۸۳ families of fishes, ۱۲ shrimp species, ۳۵ species of crabs belonging to ۱۲ families, ۸ species of the snakes, ۶ species of

cuttlefish and squids and 1 species of octopus. Different type of fishing gears and sampling equipments are also included in the museum.

### **Research vessels**

The inshore and offshore studies of ISRC are facilitated by four research vessels.

- Ferdows 1 with 1600 HP engine, 45.5 m overall length, Moulded beam 10 m, Draft 3.8 m equipped with navigation and research instruments including simrad EK6000.
- Pazhouhesh 1 with 600 HP engine, 31 m overall length, Moulded beam 8.5 m, Draft 3 m equipped with a 15 m<sup>2</sup> laboratory room, navigation and research instruments.
- Pazhouhesh 2 with two 360 HP engines, 10 m overall length, Moulded beam 3.5 m, Draft 1 m equipped with navigation and research.
- Morvarid boat with two 90 HP engines, 7.5 m overall length, Moulded beam 2 m equipped with GPS.

### **Research Departments:**

The ISRC activities conduct in 4 departments: Shrimp aquaculture, Health and disease of shrimp, Biology and stock assessment and Ecology. It also has three affiliated research stations namely, Persian Gulf SPF research station, Bandargah brood

stocking research station and Helleh shrimp farm research station.

### **1. Aquaculture Department:**

The activities of the aquaculture department are carried out in two research divisions: shrimp broodstocking & farming and shrimp physiology & nutrition.

### **Mission:**

Sustainable development of shrimp culture in the country's water bodies.



### **Objectives:**

- Investigating the possibility of different species of shrimp to increase the diversification of Iran shrimp culture industry

- Research and study in order to shrimp genetic improvement and selective breeding.
- Improving the reproductive efficiency of shrimp broodstocks and transforming the larval stages.
- Increasing the production efficiency of farmed shrimp through implementing new technologies.
- Research on the nutritional needs of shrimp in different stages of the life cycle.
- Study on improvement and development of shrimp brood stocking
- Socio-economic study of shrimp farming activities.

### **Achievements:**

- ✓ Introducing shrimp to Iran aquaculture industry by achieving the biotechnique of propagation and culturing of five shrimp species; Green tiger prawn (*Penaeus semisulcatus*), Indian white prawn (*Fenneropenaeus indicus*), Black tiger prawn (*Penaeus monodon*), Banana shrimp (*Penaeus merguensis*) and White pacific shrimp (*Litopenaeus vannamei*).

- ✓ Provision of the Iran shrimp strategic planning, vision ۲۰۲۰.
- ✓ Intensive cultivation of *L. vannamei* (۱۲۰ pcs/m<sup>۲</sup>) with yield of ۱۴,۰ tons/ha<sup>۲</sup>.
- ✓ Identification of population, evaluation of genetic biodiversity and selective breeding of *L. vannamei*.
- ✓ Semi-mass production of plant-based food ration for farmed shrimp and artificial food ration for larval stages.
- ✓ Cultivation of *L. vannamei* in inland brackish water (Bushehr, Golestan, Fars and Mazandaran provinces).
- ✓ Continuous cultivation of shrimp in green house RAS ponds.

#### ۲. Health & Disease Departments:

In the Shrimp health & disease department, the activities are carried out in two divisions namely; Infectious disease & Non infectious disease.

#### Mission:

Increasing the shrimp production efficiency through enhancement of health level and diseases prevention.

#### Objectives:

- Detection the shrimp pathogens agents and identifying the best methods for prevention and treatment.
- Development diagnostic, treatment, control and prevention methods of shrimp diseases.
- Production of SPF brood stocks.
- Codification of pharmacopeia and drugs application in shrimp hatcheries and farms centres
- Monitoring and identification of shrimp and other aquatics animal disease.



#### Achievements:

- ✓ Acquisition of technical knowledge and commercialization of specific pathogen free (SPF) shrimp production.
- ✓ Introducing three native probiotic bacteria to Iran farmed shrimp

industry. (have been recorded in NCBI).

- ✓ Acquisition of technical knowledge for production of multiplex diagnostic Kit for WSSD.
- ✓ Introduction of suitable disinfectant to prevent viral diseases
- ✓ Production of shrimp immunity system inducer from native algae (Sargassum sp. and Padina sp.).
- ✓ Laboratory production of WSSD radio vaccine.
- ✓ Introducing herbal extracts of Zataria multiflora to control fungal diseases.

#### ۳. Biology & Stock Assessment Department:

The biology & stock assessment department carries out its studies in two research divisions of shrimp biology and shrimp stock assessment.

#### Mission:

Research towards sustainable exploitation and conservation of aquatic resources



### Objectives:

- Study on life cycle of the commercial shrimps in the Persian Gulf and Oman sea.
- Estimation of the optimum fishing season and stock assessment of economically important marine aquatic species
- Estimation of abundance indices of marine resources
- Study of shrimp and other commercial aquaculture fishing patterns. Optimization of fishing gears towards more selective harvesting techniques
- Socio-economic study of fisheries activities.

### Achievements:

- ✓ Defining the appropriate fishing season for catching Shrimp, Croaker, Silver pomfret, Mackerel, Cuttlefish, Sharks, Hairtail and Sardine on the basis of biological indices.
- ✓ Introducing implicit fish reducer (BED) for shrimp trawl net.
- ✓ Total ban on finfish fishery.

- ✓ Standardization of shrimp trawl net and gillnets.
- ✓ Introduction of artificial reef to fishery.
- ✓ Improvement of shrimp catch prediction model.
- ✓ Promotion of the management for exploitation of the cuttlefish stocks.
- ✓ Identification of pearl oyster stocks in Bushehr province coastal waters.
- ✓ Provision of Iran wild shrimp strategic planning, vision ۲۰۲۰.

### ۴. Ecology Department:

The ecology department has two groups of non-biological and biological studies.

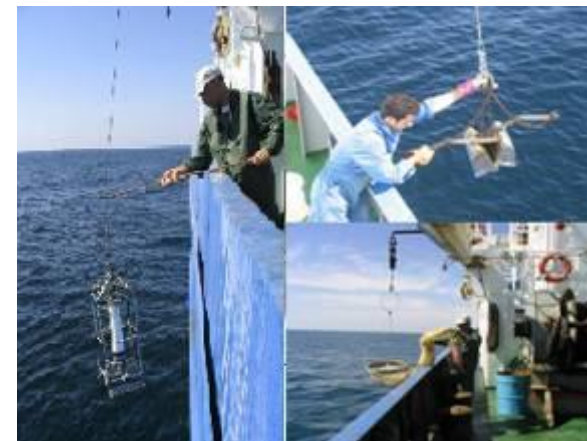
### Mission:

Survey on water resources and determination of their ecological capacity

### Objectives:

- Investigation of the interactions of shrimps with other aquatics and their environment
- Ecological studies of the susceptible water resources for aquaculture
- Identification of biological, chemical and physical threats, and their effects on marine ecosystem and aquatics
- Conduct environmental basic studies (EBS) and environmental impact

assessment (EIA) of industries on aquatic species and ecosystems.



### Achievements:

- \* Introducing fish and shrimp nursery grounds and spawning areas in the Bushehr province waters.
- \* Determining the normative and ecological conditions for cultivation of shrimp in inland waters.
- \* Introducing the oyster and pearl mussels habitats in Bushehr province coastal.
- \* Identification and mitigation method for biological threats (harmful algal and jelly fish bloomer) in Bushehr province waters.
- \* Identification of the hydrobiological conditions of Bushehr province waters.
- \* Introduction of artificial reef to fishery

- \* Monitoring of the effects of shrimp farms effluent on the marine environment and provision of their environmental criterions.

**Scientific journal:**

The Iran Shrimp Research Center has been publishing the extension journal of shrimp and crustaceans since ۲۰۱۶ with the aim of improving the level of knowledge of the activists of fisheries and aquaculture industry and introducing research achievements.

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Web page of shrimp and crustaceans journal:  
<https://scj.areeo.ac.ir>

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