

中国水产科学研究院

南海水产研究所

South China Sea fisheries Institute, Chinese Academic Fishery Science Research

与时俱进 开拓创新



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辉煌的历程

南海水产研究所于1953年在广州市正式成立（原名广东省人民政府农林厅水产局水产研究所），经过半个世纪的建设，已发展成为南海区从事热带亚热带水产基础与应用基础研究、水产高新技术研究和水产重大应用技术研究的公益性基础性国家级科学研究机构。

In 1953, South China Sea Fisheries Institute was founded in Guangzhou. After half century's building, it has already developed into a non-commercial-elementary national research agency, which takes up tropical and subtropical fishery fundamental and applied fundamental research, high-new fishery techniques and vital applied fishery techniques research in South China Sea Area.



创新的科研机构

所内设有海洋渔业资源与捕捞技术研究室、水产养殖和遗传资源与增殖技术研究室、营养与食品工程研究室、海洋渔业生态环境与污染监控技术研究室、渔业生物病害防治研究室。并设有农业部渔业生态环境重点开放实验室、广东省渔业生态环境重点实验室、农业部渔业环境及水产品质量监督检验测试中心（广州）、农业部渔业环境监测中心南海区监测站、农业部南海区渔业病害防治中心等，在广东省深圳市和海南省三亚市分别设有野外实验基地。

The Institute consists of Marine Fishery Resources and Fishing Technique Division, Fishery Resources of Germplasm and Proliferation & Cultivation Division, Nutrition and Food Engineering Division, Marine Fishery Ecology Environment and Pollution Monitoring and Control Technique Division and Fishery Organism Diseases Control Division. As while, Key and Open Laboratory of Fishery Ecology Environment of Agriculture Ministry, Key Laboratory of Fishery Ecology Environment of Guangdong Province, Fishery Environment and Aquatic Products Quality Supervision & Testing Center of Agriculture Ministry (Guangzhou), South China Sea Area Monitoring Station of Agriculture Ministry Marine Fishery Environment Monitoring Center, Prevention and Control research Center of Mariculture Organism Diseases in South China Sea of Agriculture Ministry are located in the institute. In addition, the institute settled two field experimental bases in Shenzhen of Guangdong province and Sanya of Hainan province.

国家“九五”攻关专题(96-008-03-04)南海区半封闭型海湾规模化养殖技术研究

专题经五年实施,完成了合同规定的研究内容和经济技术指标,建立了浅海滩涂养殖、水池(鱼)养殖、鲍鱼工厂化养殖等各种规模化养殖模式,并提出了养殖环境质量与潜在风险评价技术,取得良好经济效益、生态效益和社会效益,为南海区开展规模化养殖提供了科学依据。专题已通过国家组织的验收。

The Special Subject of National "Ninth-Five" Key Problems Tackling(96008-03-04):The research on Half-closed Bay Scale Culture Techniques in south China sea area

After 5 years of work, the research contents and economical and technical targets stated in the contract have been finished. To setup the different types of scale culture models of shallow water sea beach culture, pond(fish) culture, plant culture of abalone and raise the assessment technique of cultural environmental quality and potential risk. It has high economic, ecological and social benefits and provided scientific base for the expansion of scale culture in south China sea area. It passed the acceptance inspection organized by state.



2002年获奖科技成果

广东省科技进步奖



圆杯鱼(乌鲤、罗非鱼)循环系统与鱼苗防疫技术



我国防微性贝类毒素和有毒藻类



南海区盐田港附近海水养殖鱼类资源调查、开发及管理

广东省农业科技推广一等奖



微生物改良养殖生态技术的推广应用



丰硕的科研成果

建所以来,承担各级各类科研项目500多项,获得各类科研成果238项,其中,国家级奖励9项,省、部级奖励57项。突出的科研成果有《四大家鱼人工繁殖》、《大珠母贝人工育苗与插核技术》、《“南海贻贝观察”体系的研究》、《广东省海珍品水域海洋生物和渔业资源调查》、《鲷鱼人工繁殖与育苗技术研究》等。这些科技成果,为促进水产科学技术的发展和繁荣渔(农)村经济做出了积极的贡献。

本所承担科技成果转化有科技服务公司和饲料与健康养殖技术开发中心,科技公司重点是渔业管理与规划、渔业工程、技术推广与示范等提供技术服务;健康养殖中心拥有以三微产品(微生物环境调节剂、微生物饲料添加剂、微生物肥料)和绿色渔药系列为龙头产品的品牌,年生产能力逾千吨,产品远销全国各地二十几个省市及东南亚沿海国家。

Since the foundation of institute, totally more than 500 scientific research projects of different grade and type were taken on, and 238 scientific research achievements were obtained, including 9 national class prizes, 57 provincial and ministerial class prizes. Among of these, the outstanding ones are "The Artificial Breeding of Four Major Domestic Fishes", "Artificial Breeding and Nucleus Insertion Pearl Culture Techniques of *Pinctada maxima* (Jameson)", "Study on the South China Sea Mussel Watch System", "Marine Organisms and Fishery Resources in the waters around the islands of Guangdong Province", "Artificial Propagation and Larvae Rearing of grey mullet (*Mugil cephalus* Linnaeus)" and so on. These scientific achievements played active roles in enhancing the development of fishery scientific technology and booming the fishery and/or rural economics.

The scientific research achievements of the institute are transformed in Science & Technology Services Company and Feed & Healthy Culture Techniques Research and Development Center. Science and Technology Services Company focus on the technical services for the fishery management & plan, fishery engineering, and the technique spread & demonstration; Feed & Healthy Culture Technique Development Center produces a series of goods which are represented by "Tri-micro Products" (Microbe Environment Mediator, Microbe Feed Additive, Microbe Fertilizer) and "green fishery medicine". Its annual production capacity is more than 1000 tons, the commodity are distributed to more than 20 provinces and cities in national market as well as south-east maritime countries.



一流的科技人才

全所现有职工345人,其中科技人员177人,包括研究员12人,副研究员35人。获国家级“有突出贡献中青年专家”称号2人,省、部级“有突出贡献中青年专家”称号7人;享受国务院特殊津贴专家32人;获全国、省级劳动模范称号5人次,全国农业先进科技工作者2人,获广东省科技奖3人,广东省青年科技标兵6人……。本所已基本形成了一支学科配置合理,创新意识强,学术思想活跃,勇于拼搏的以中青年科技人员为主的研究队伍。

Among the 345 staffs in the institute, 117 staffs are engaged in the scientific research including 12 professors and 35 associate professors. 2 staffs were awarded with "National Great Contributory Middle-aged/Youthful Expert" title, 7 staffs with "Provincial/Ministerial Great Contributory Middle-aged/Youthful Expert" title, 32 staffs with "State Council Allowance", 5 person-times with national or provincial "Labor Exemplar" title, 2 staffs with "National Advanced Agricultural Scientific Personnel" title, 3 people with "Dingying Scientific Prize", 3 people with "Youth Example of Guangdong Province" and so on. In the institute, a research contingent that is constituted of youthful and middle-aged personnel mainly formed, which disciplines are collocated reasonably, have strong innovation sense as well as active scientific ideas and is brave in combat with difficulty.



全国先进工作者、所长潘炎俊书记唐晓平

雄厚的实力

全所固定资产共5000多万元,拥有万元以上的科研仪器200多台(套)。图书馆藏书量8万余册,中外期刊1800多种,并出版有《南海水产研究》期刊。

成立于1954年的标本室现有各类海洋生物标本1万多瓶(件),其中新种数十种,是华南地区贮藏量最大的海洋生物标本库。

The total fixed assets of the Institute are more than 50 million Yuan (RMB), the number of the equipment which value is higher than 10,000 Yuan is more than 200. There are more than 80,000 copies of book and 1600 kind of inland/oversea periodicals in the library, while the periodical "South China Sea Fishery Research" is published. The "Specimen Room" holds more than 10,000 bottles/units of different marine organism specimen, the storing quantity is biggest among the marine organism specimen libraries in South China.





代笔现场调查



海洋渔业生态环境监测与评价

海洋渔业生态环境与污染监控技术研究

(1) 进行了开拓性基础调查研究,摸清了南海近海水域、海岛水域和海岸带水域渔业生态环境质量状况和变化趋势,建立了海洋渔业环境质量调查方法和评价模式,填补了我国海洋渔业生态环境质量调查研究领域的空白。

(2) 发展了渔业水域环境质量监测与评价的方法和技术,开展了一系列渔业水域污染基线调查和渔业环境监测计划,对渔业环境质量状况进行了多次区域性、系统性的调查与评价,研究了重金属、农药、石油、人工合成化学物质、工矿及城市污水对渔业生物、水生生物、浮游生态和底栖生态的影响效应。开展了海洋渔业环境中的有机污染、富营养化与赤潮发生机理的关系以及藻(贝)类毒素研究。

(3) 进行了临海和海上大型综合开发工程对渔业资源和生态环境的影响评价研究。大力开展养殖环境容量、养殖环境调控与养殖环境修复等方面的研究工作,重点开展了养殖环境恶化与病害爆发的关系、生态改良与病害综合防治技术等方面的研究,取得了显著的科研成果。

以本研究领域为技术依托,已建起了农业部渔业生态环境重点开放实验室、广东省渔业生态环境重点实验室、农业部南海区渔业生态环境监测中心。

Marine Fishery Ecology Environment and Pollution Monitoring and Control Techniques Research

(1) Through the pioneering basic investigation, found out the quality situation and change trend of fishery ecological environment of the off-shore, islands and coastal water area of South China Sea, established the method and evaluation model for the marine fishery resource environment quality survey, filled the vacancy in the research of the marine fishery resource quality survey in China.

(2) Improved on the methods and techniques of marine fishery resource environment quality monitoring and evaluation, carried out a series of baseline survey of fishery water area pollution and monitoring program of marine environment, conducted regional and systematic survey and evaluation on the fishery environment quality time and time. Studied the influence of heavy metal, agricultural drug, petrol, artificial chemicals and urban sewage on the fishery organisms, aquatic organisms, pelagic ecology and benthical ecology. Carried out the research on the relationship between the occurrence of "red tide" and organic pollution & eutrophication in the marine fishery environment as well as the algae (shellfish) toxin.

(3) Evaluated the influences of the coastal and maritime large-scale integrated exploitation projects on the fishery resources and ecology; Launched out the research on the rearing capacity of environment, the adjust and control as well as the restore of the cultural environment vigorously; laid stress on the research of the relation between the degeneration of the cultural environment and the diseases breakout, ecological improvement and the integrated prevention and control techniques of the diseases, and remarkable achievement was accomplished.

Based on this research field, the following laboratories were founded: Key Laboratory of Fishery Ecology Environment, Agriculture Ministry; Key Laboratory of Fishery Ecology Environment, Guangdong; Marine Fishery Environment Monitoring Center in South China Sea Area, Agriculture Ministry.

海洋渔业资源与捕捞技术研究

主要研究领域包括海洋渔业资源探捕调查和渔场开发, 渔具的设计、改进和推广, 渔具渔法对渔业资源影响的调查评价、渔业自然资源监测评估与主要经济鱼类种群自然生活史研究等。研究的地理范围覆盖了从河口、海湾、沿岸至南海中部岛礁区和南海西南部陆架区的整个南中国海区域, 以及中西太平洋的部分远洋水域。该室的研究工作为我国海洋渔业资源的保护、管理、合理开发和可持续利用提供了科学依据, 为海上划界、维护我国海洋权益提供了理论支撑。

(1) 海洋渔业资源领域: 从20世纪50年代末起至今, 进行了一系列规模空前的南海区渔业资源调查, 包括南海北部大陆架底拖网鱼类资源调查、西、中沙海域渔业资源调查、南海北部大陆架外海鱼类资源调查、南海北部大陆斜坡海域渔业资源综合考察、南海北部近海和大陆斜坡虾类调查、广东省浅海滩涂增殖养殖渔业环境及资源调查、广东省海盐水域海洋渔业资源、南沙海域渔业资源调查、北部湾渔业资源调查等, 对南海渔业资源的种类、数量、分布移动、生物学特点、资源特征、渔场渔汛、渔业环境等作深入的研究, 取得的科研成果, 填补了我国热带亚热带渔业资源研究的空白, 绘制了南海渔场图, 开辟了新渔场, 大大地推动了南海区渔业生产开发。在“九五”至“十五”期间, 对我国大陆架和专属经济区进行了全面、系统的调查研究。

此外, 在南海沿岸区进行了人工鱼礁试验与效果评价、渔业资源增殖试验, 在远洋区进行了金枪鱼资源探捕, 开展了海洋生态调查、海洋哺乳动物观测等, 还首次赴南太平洋贝劳海域开展远洋渔业调查和生产性试验, 为我国远洋渔业的发展开辟了新的途径。

(2) 捕捞技术研究领域: 从20世纪50年代起开始南海区海洋捕捞技术研究, 先后试验成功全国首创并推动群众机帆船灯光围网作业和发展的“机轮灯光围网”、填补了国内空白的“电脉冲捕虾技术”、国际领先水平的“渔用柔囊翼型浮子”、南海首创的“拖网囊网最小网目的研究”、国内领先水平“人工鱼礁的研究”和“四片式拖网技术研究”等。90年代以来重点开展渔具渔法改革、捕捞渔业副渔获问题及对策、人工鱼礁建设、渔具渔法对资源的影响和选择性捕捞等研究, 为保护海洋渔业资源和渔业生态, 促进我国海洋渔业的可持续发展作出了积极贡献。



人工鱼礁建设



渔具测试

Marine Fishery Resources and Fishing Techniques Research

The study fields include marine fishery resources survey and fishing ground exploitation, the design, mend and spread of fishing tools, survey and assessment of fishing tools & fishery law influences on the fishery resources, monitoring and assessment of natural fishery resource, the research of nature life cycle of major commercial fish population and so on. The research geographical scopes covered all the South China Sea area, a consisted of estuary, bay, the island and reef area from coast to South China Sea central section, and the continental shelf of the south-west part of South China Sea, along with part of central-west Pacific pelagic water area. The research results of the division provided scientific basis for the conservation, management, reasonable exploitation and sustainable uses of marine fishery resource of our country; it provided theory supports for the sea area delimit and maintain oceanic rights and interests of our country also.

(1) The field of marine fishery resources. Since the end of the 1950's, a series of unprecedented marine fishery resources surveys in South China Sea were carried out, which includes fish resources after trawl surveys of northern South China Sea continental shelf, Xi-zhong-Sha sea area, a fishery resources survey, high seas fish resources survey of northern South China Sea continental shelf, the integrated marine fishery resources survey of the continental slope of northern South China Sea, shrimp resources survey of the off-shore waters and continental slope of northern South China Sea, the proliferation and cultivation fishery environment and resources survey of the shallow sea and shoal in Guangdong province, the marine fishery survey of the island sea water in Guangdong province, fishery resources survey of Nan-sha sea area, fishery resources survey of Beibu Bay and so on. The in-depth research was conducted on the species, quantity, distribution and migration, biological characteristics, fishing ground and fishing season, fishery environment of South China Sea fishery resources and the scientific achievements obtained supplied a gap of tropical and subtropical fishery resources survey of our country. The fishing ground chart was drawn and new fishing ground was exploited. All of these enhanced the fishery resources exploitation in South China Sea. During the period of ninth and tenth "Five-Year Plan", the thoroughly and systemic investigation were made on the fishery resources of the continental shelf and exclusive economic zone of our country. In addition, the artificial fishing reel experiments and evaluation as well as the experiment of fishery resources proliferation were conducted along the coast of South China Sea. In pelagic zone, we carried out the trial fishing of tuna resources, survey of the marine ecology and observation of the marine mammals and the like. We also went to Palau sea area of south Pacific to launch an investigation of pelagic fishery resources and trial production first times, which carved out a new way for the pelagic fishery development of our country.

(2) The Field of fishing techniques research. From 1950's, the fishing techniques research was launched. The "Machine-gear Lamp Purse Net" technique has been invented firstly in China, which promoted the development of lamp purse net production of motor-sailing ship. "Electric Pulse Shrimp Fishing" technique filled a national vacancy, "fishery wall-wing-like bobber" worldly advanced, the research on the limit mesh-size of (rawl) codends is the first example in South China Sea area. The research on artificial fish reef and four-panels trawl net technique pioneered in China; some other achievements are obtained also. Since 1990's, the researches have been focused on the reform of fishing tools and fishery law, the issue and countermeasure of fishing fishery by-products, the building of artificial fish reef, the influences of fishing tools & fishery law on the resource and selective fishing. These research results play and will play important roles in the conservation of fishery resources and ecology, at the same time, they enhanced the sustainable development of marine fishery in China.

水产养殖种质资源与增养殖技术研究

(1) 1958年率先取得家鱼人工繁殖技术的突破,使我国的鱼苗生产从此摆脱了千百年来依赖自然江河捕捞的历史,为我国淡水养殖业的飞跃发展作出了巨大贡献,目前这一技术已在全世界范围内得到推广应用和发展。

(2) 20世纪70年代,我所率先获得了大珠母贝人工育苗和插核育珠成功,培育出我国最大的人工养殖珍珠,这一成果处于世界领先水平。同期在杂色鲍人工育苗技术上取得突破,是广东鲍鱼工厂化育苗和养殖的开创者。

(3) 20世纪70年代末起开始进行海水鱼类人工繁殖技术研究,相继率先取得海马、黄鲷、平鲷、中华乌塘鳢等人工繁殖技术的成功,建立了鲷鱼苗种批量生产新技术。

(4) 20世纪80年代,率先在国内取得了包括斑节对虾、日本对虾、墨吉对虾、长毛对虾、刀额新对虾、近缘新对虾等8种对虾的引种、驯化、繁殖和养殖成功,同时率先在华南进行中国对虾人工繁殖及养殖技术系统研究。

(5) 20世纪90年代在贝类种苗培育、养成方面取得了突出成果,车风螺、鲍、西施舌育苗等技术处于领先地位。

(6) “九五”以来,大力开展了海产动物的细胞培养、遗传多样性、分子标记、基因文库构建和基因克隆研究,成为国内海洋生物种质资源与生物技术育种的单位之一。

(7) 80年代以来开展了一系列规模化、集约化健康养殖工程技术研究,创立了南方半封闭型海湾规模化养殖配套技术和模式,建立了微生物工程调控对虾健康养殖配套技术和模式以及海水网箱高效养殖技术等。



我国著名珍珠养殖专家覃利美研究员
在海南热带水产研究中心研究插核技术

Fishery Resources of Science and Breeding & Cultivation Research

(1) The breakthrough was taken the lead in the artificial breeding of domesticated fish in 1958, which made the production of fry get out the dependence on fishing from the river for thousands of years, and enhanced the rapid development of fresh water aquaculture. At present, this technique is applied and developed worldwide.

(2) In 1970's, to take lead in developing the artificial breeding and nucleus insertion technique of *Pinctada maxima* (Jameson) and cultured the biggest manual-reared pearls in China, this achievement is worldily advanced; at the same period, to make breakthrough in the artificial breeding of abalone *Haliotis diversicolor* *aquilalis*, to be the pioneer of factory breeding of abalone in Guangdong province now.

(3) To start the research of the marine fish artificial breeding at the end of 1970's, to be the first to develop the artificial breeding technique of *Hippocampus* spp., *Rhabdosomus* *sarba* (Forsk.), *Dentex tumifrons*, *Bostichthys sinensis* and so on in succession, and set up the new technique of grey mullet fry mass production.

(4) To take lead in succeeding in the introduction, acclimatization breeding and culture of 8 species of prawn shrimp including *Penaeus monodon*, *P. japonicus*, *P. meiguensis*, *P. penicillatus*, *Metapenaeus affinis*, *M. ensis*; and to be the first to conduct the systemic research on the artificial breeding and rearing techniques of *Penaeus orientalis* in south China.

(5) In 1990's, the great achievement was acquired in artificial breeding and nurtrurance of shellfish the artificial breeding techniques of *Babingtonia* spp., *H. diversicolor*, *Coelommatra antiquata* and so on, which is one-up in the world.

(6) Since the ninth "Five-Year Plan" to start research intensively on the cell culture, genetic diversity, molecular marker, gene library forming and genecloning of marine organisms, and to be one research agency to develop the techniques of germplasm resources and biotechnical breeding of marine organism in China.

(7) Since 1990's, to launch a series of researches on scale and integrated health culture engineering and techniques, found necessary techniques and model of scale culture in half-closed bay in south China, necessary techniques and model of shrimp health culture modulated with microbe engineering as well as efficient cage culture techniques of marine fish.

营养与食品工程研究

本学科重点开展水产品保鲜与加工、海洋功能性食品与海洋药物、水产品质量标准等方面的研究,承担多项海洋863高技术项目、自然科学基金项目、省部级重点项目以及各级资金的研究项目。同时在水产品食用安全与质量监控技术以及行业标准化方面做了大量工作。

在水产品冷冻保鲜方面进行了大量开

菜油机排气余热制冷保鲜和活鱼运输技术
在水产加工和综合利用方面,鱼糜系



拓性研究:冷却海水保鲜技术、低温盐水平冻保鲜技术、

等项目的研究均处于国内首创和领先地位。
列制品、低值鱼及加工废弃物的开发、水产系列饲料、提

海产品低温保鲜技术
在冷链生产中的应用

功能食品、食品添加剂、海洋资源



focused on the processing and storage and medicine, the standard of aquatic marine 863 high technology "serial important projects and pre-food safety & quality monitoring

in freezing storage of aquatic products with cooling sea water, highly frozen

Nutrition and Food Engineering Research

The researches of this discipline are related to aquatic products, marine functional food, aquatic products quality. To undertake multi-term projects, "natural sciences funds" projects, provincial and ministerial supported by other funds. A lot of works have been done in the techniques and the standardization of industry also.

A large number of pioneering researches have been conducted. A few of researches including the technique of fresh storage of fresh storage with low temperature salt water, cooling fresh storage with the waste heat of diesel engine and transport of live fish are initiative and in the lead in China.

In the aspect of the processing and integrated application of aquatic products, some achievements are advanced in China. They are: the serial of products of fish meal, the processing and development of low value fish and waste aquatic feed, the new extracting techniques of *Gracilaria* spp. Agar extracts, the development of fresh water fish gonad and algal high active edible fiber. Some accomplishments were obtained in the exploitation and research of marine vegetable and screen and preparation of anti-tumor active material.

渔业生物病害防治研究

从20世纪70年代末期开始起步,20多年来,在南海区海水养殖生物的寄生虫病、细菌病、病毒病、药物实验和综合防治等方面开展了大量工作,在海水鱼流行病研究中,对石斑鱼腮腺病和弧菌病、黄鳍鲷球菌病、海水鱼类刺激隐核虫病进行了深入研究,对海水鱼免疫防治取得了新突破,首次分离纯化出4种南方重要海水养殖鱼类的免疫球蛋白,并制备出针对免疫球蛋白的单克隆抗体,重点研究了南方对虾养殖品种斑节对虾和墨吉对虾的病毒病、细菌病,研究对虾非特异性免疫系统及部分免疫增强剂的作用机理,初步筛选出数种适宜的免疫增强剂,提出和建立了对虾养殖病害综合防治模式和技术;在养殖鲷病病毒、立克次体病和弧菌病研究方面取得了新进展;率先在水产病害研究成果的基础上提出和建立了健康养殖模式和病害综合防治模式,取得显著成效。

近几年来,共研制开发3大类8系列海水养殖病害防治高技术药物、健康养殖系列产品,与健康养殖模式和病害综合防治形成配套技术,在海水养殖生产中推广应用,发挥了巨大的技术辐射作用。

Fishery Organism Diseases Control Research

Since the end of 1970's, a great deal of researches have been conducted concerning the parasitosis, bacteriosis, virus, medicine trial and integrated prevention control of the diseases. In the study on the epidemiology of marine fish, the deep researches were carried out in the aspects of the bladder-expansion disease and vibriosis of grouper, the *Staphylococcus epidermidis* disease in *Sparus latipes* and *Cypricaryon irritans* in marine fish. New breakthrough was accomplished in the study on the immunological prevention and cure of marine fish diseases, i.e. of 4 species of cultured marine fish in south China were produced and the MAb's Anti- γ were prepared. To study the defense mechanism of shrimp and the reaction to the immuno-stimulator, and screen out a few kind of immuno-stimulators. It was also carried out to raise and found the integrated prevention and cure model and technique for shrimp culture. New progress was made in the research on the virus, rickettsiosis and vibriosis of cultured abalone. To be the first to raise and found health culture and integrated diseases prevention and control model based on the results of the aquatic organism disease research, and get fruitful result.

In recent years, 3 kinds and 8 series of products with high technology for health mariculture were developed and produced. These products were applied to the mariculture combining with the health culture and integrated diseases prevention & control model, which played a great role in the development of mariculture.



对虾的病毒病组织切片(电镜)

实验室体系与社会公益体系建设

农业部渔业生态环境重点开放实验室

实验室以研究和解决我国渔业生态环境存在的关键技术问题为方向, 近期主要研究内容包括:

- (1) 渔业水域生态环境监测与质量评价
- (2) 渔业增殖水域环境容量及养殖容量
- (3) 渔业增殖水域环境污染效应及生态修复理论与技术
- (4) 渔业养殖环境高效、生态调控、环保产品研发、开发与推广示范
- (5) 养殖环境与水产病关系及综合防治
- (6) 渔业生态环境变化对渔业种质资源和天然资源的影响
- (7) 退化生态系统的恢复与重建
- (8) 生态养殖工程与生态设施渔业等。

主要承担国家“海洋863”、国家“十五”科技攻关及农业部、广东省等重大项目。实验室主任: 贾晓平研究员(所长、博士生导师); 副主任: 林钦研究员(硕士生导师)、实验室学术委员会主任、黄良民研究员(中科院南海海洋研究所副所长、博士生导师)。

The Construction of Laboratory and Social non-commercial System Key Laboratory of Fishery Ecology Environment of Agriculture Ministry

The researches are focused on the key techniques concerning with the fishery ecological environment, and the main research contents are:

- (1) monitoring and quality evaluation of fishery ecological environment
- (2) environmental capacity and cultural capacity of fishery, proliferation and cultivation waters
- (3) environmental pollution effects and ecological restore theory & techniques of fishery proliferation and cultivation waters
- (4) the research, development and demonstration of high-effective and ecological products for the fishery environment conservation
- (5) the relationship between the aquatic diseases and environment and integrate prevention & cure of the diseases
- (6) the influences of fishery ecological environment change on the fishery germplasm and natural resources
- (7) restore and rebuild of the degenerated ecological system
- (8) ecological culture engineering and ecological facility fishery and so on. The main projects included national "marine 863", national tenth "Five-year Plan" Key Scientific Problems Tackling and some major projects from Agriculture Ministry and Guangdong Province. There are 15 fixed staffs in the lab. The lab director: Prof. JIA Xiaoping (director of the institute, Ph.D tutor); the scientific committee director of the lab: HUANG Liangmin (vice president of South China Sea Institute of Oceanology, Academia Sinica, Ph.D tutor).



广东省渔业生态环境重点实验室

实验室以渔业水域生态环境监测与质量评价技术、渔业增养殖水域环境容量、污染调控与环境修复技术、渔业环境污染与水产病害发生关系及综合防治技术、环境污染对养殖生物影响效应与防控技术、环境污染对增养殖种质与渔业资源的影响、水产养殖自身污染防治技术与水产品品质保障技术为主要研究内容。以跟踪渔业科技发展动态,加强渔业生态环境与可持续利用技术研究。承担广东省渔业生态环境重点科技项目,解决广东省渔业发展所面临的生态环境方面的重大科学技术问题。把重点实验室建设成为拥有自主知识产权和科研成果和科技储备的研究、开发基地为近、中期研究目标。

实验室面积1200m²,拥有各类实验室10间,试验基地面积26507 m²,试验水体3800m³,试验海面139850m²,仪器设备110台(套),价值650万元。

Key Laboratory of Fishery Ecology Environment, Guangdong

The main research contents are the research on the monitoring and evaluation techniques of fishery waters ecological environment, the environmental capacity of fishery culture environment, pollution adjustment and environment restore techniques, the relationship between the aquatic diseases and environment and integrated prevention & cure of the diseases, techniques, the effects of environment pollution on the cultured organisms and prevention & control techniques, the influences of environment pollution on the proliferation & cultivation, germplasm and fishery resources, the aquatic products quality guarantee techniques. To keep pace with the development of fishery sciences and strengthen the research on the ecological environment and their sustainable utilization techniques. To take on the key projects on the fishery ecological environment science of Guangdong province and solve the key fishery ecological environment scientific problems being confronted with the fishery development of Guangdong province.

The lab area is 1200m², the experiment base area is 26507m², the experiment waters volume is 3800m³, the experiment offing area is 139850m². In addition, there are 110 sets of apparatus and equipments which value are 6.5million Yuan.



农业部南海区渔业生态环境监测中心

中心成立于1985年,隶属中华人民共和国渔政渔港监督管理局领导,持有我国渔业污染事故鉴定资格甲级证书。主要从事渔业生态环境监测和研究、渔业污染事故调查和鉴定。建设项目对渔业资源及渔业生态环境的影响评价等方面的工作。近十年来取得各级科技成果奖励18项,其中:获国家科技进步三等奖1项,部级科技进步二等奖4项、三等奖4项,厅局级科技成果奖励9项,发表学术论文200多篇,1998年被国家环保局评为“全国环境监测网络先进单位”。

中心现有固定人员10人,其中:研究员4人、副研究员3人,全部人员都持有中华人民共和国渔政渔港监督管理局颁发的渔业污染事故鉴定资格证书。

South China Sea Fishery Ecology Environment Monitoring Center, Agriculture Ministry

The center, which was founded in 1985, is subordinate to the Agency of Fishery Policy and Fishing Harbor Management, PRC and possesses the authentication quality certification (class A) of fishery pollution accident. To deal with mainly the monitoring and research of fishery ecological environment, the investigation and authentication of fishery pollution accident, the assessment on the influences of the construction projects on the fishery resources and ecological environment. In recent ten years, there are 18 academic achievements obtained from different level, one of them is national science and technology advance prize (Class 3), eight of them is ministerial science and technology advance prize (Class 2), more than 200 papers were published. In 1998, it was rewarded to "National Advanced Unit of Environmental Monitoring Work".

There are 10 regular staffs, including 4 professors and 3 associate professors. All of the staffs attained the authentication quality certification issued by Fishery Policy and Fishing Harbor Management agency.



实验室体系与社会公益体系建设

农业部南海区渔业病害防治中心

中心包括中心实验室、中试实验工厂、健康苗种选育和高健康养殖技术示范基地，是为南海区热带亚热带海水养殖业的健康、稳定和可持续发展，集海水养殖病害防治科学研究、综合防治技术、绿色渔药和健康养殖系列产品研发中试、健康种苗选育和高健康养殖示范、技术咨询、技术培训、技术服务和技术推广等综合功能为一体的国家区域性海水养殖病害防治研究中心。



Prevention and Control Research Center of Mariculture Organism Diseases in South China Sea, Agriculture Ministry

The center is consisted of central lab, middle-scale test plant, high-health seed breeding and culture techniques demonstration base. It is a national center for regional

mariculture organism diseases prevention and control with integrated function including the research of mariculture organism diseases prevention and control sciences and techniques, development and middle-scale test of green fishery drug and series products for health-culture, high-health seed breeding and culture techniques demonstration, technique consultation, technique training, services and technique spreading and so on.

农业部渔业环境及水产品质量监督检验测试中心（广州）

本中心是农业部授权、经过国家计量认证，为社会提供公证数据的法定专职产品质量检验机构和农业质量技术执法机构。现设有业务室、第一检验室和第二检验室，工作人员18名（其中正高5名、副高8名）。主要承担农业部或有关部门指定的渔业环境与水产品质量监督检验、鉴定和评估，有关产品质量的仲裁检验和其他委托检验，承担或参与有关标准的试验验证工作，研究新的检测技术和方法。

Fishery Environment and Aquatic Products Quality Supervision & Testing Center, Agriculture Ministry (Guangzhou)

The center is an official full time products testing and agricultural quality technical lawenforcement agency providing notarial data for society, which was authorized by Agriculture Ministry and passed the national measure authentication. It consists of Service Room, Inspection Room 1, Inspection Room 2 and 18 staffs (5 professors and 8 associate professors). To be charged with the fishery environment and aquatic

products quality supervision, inspection, authentication and assessment assigned

by Agriculture Ministry or other agency concerned. To do the arbitration and other entrusted examination concerning the product quality. To take charge participate in the test and verification of the related standard. To research the new detect techniques and methods.

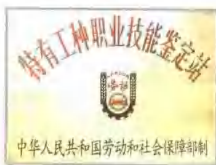


劳动和社会保障部特有工种职业技能鉴定站

鉴定站是经国家劳动和社会保障部批准在我所设立的海水养殖技术资格培训、鉴定机构，鉴定站面向全省渔业生产第一线，以培养适应现代化海水养殖生产需要的中、高级技术和管理人才为目标，培养一流的水产养殖科技实用人才。

Professional Skill Authentication Station of Special Type of Work, Labor and Social Guarantee Ministry

Authentication is a mariculture skill training and quality authentication agency authorized by National Labor and Social Guarantee Ministry to set up in the institute for the provincial fishery production front line. Its goal is to train persons with high-middle class skill and capacity of management for the modern mariculture production and top-ranking qualified scientists and technicians for aquaculture.



中试实验基地

深圳试验基地

我所科研创新体系的中试实验基地,主要从事海洋渔业资源与生态、渔业病害防治、种质资源选种育种等方面的研究以及热带亚热带鱼、虾、贝、藻种苗的工厂化生产。集研究、中试、示范、产品开发、培训与学术交流为一体,是全国规模最大的“三高”水产养殖科研和科技成果转化基地之一,承担并完成国家、部委、省市和联合国80多项科研项目,获国家、省(部)、深圳市和水科院科研成果奖33项,为解决我国名优水产种苗的繁育、增殖和病害防治等海洋渔业生产持续发展的关键技术问题作出了重大贡献。



Shenzhen Experimental Base

It is one of the middle-scale test base of the institute's innovation system. The main works are focused on the factory production of tropical and subtropical fish, shrimp, shellfish and algae seeds. It is integrated with research, middle-scale test, demonstration, product development, training and learning communication. Its scale is the largest among bases of the scientific research and science and technology achievement transformation of "Tri-high" proliferation and cultivation of aquatic organisms in China. It has taken on and

finished more than 80 scientific research projects financed by state, ministry, province (city) and United Nation. 33 achievement prizes were awarded by state, province/ministry, Shenzhen City and Chinese Fishery Science Research Academy. It contributed to the solution of the key problems concerning the sustainable development of the marine fishery industry in the aspect of the breeding of "well-known and famous" aquatic organisms seeds, proliferation and cultivation, prevention and cure of the diseases and as well.

热带水产研究开发中心

位于海南省三亚市,是我所科研创新体系的另一个中试实验基地,主要从事热带海区水产动、植物种苗繁育及增殖养殖技术的研究和开发,先后承担国家、农业部等科研项目50多项,最突出的成果《大珠母贝人工育苗、养殖和插核育珠》,培育出中国“珍珠王”及大批量珍珠,填补了我国珍珠生产的空白(该成果获国家科技进步一等奖),为我国大规模发展南珠产业奠定了基础。

Tropical Aquaculture Research and Exploitation Center

The center lies in Sanya city, Hainan province. It is another middle-scale test base of the institute's innovation system. The main works are focused on the research and exploitation of tropical and subtropical aquatic organism seeds breeding and proliferation & cultivation techniques. It has taken on and finished more than 50 scientific research projects financed by state, Agriculture Ministry. The greatest distinguished achievement is "Artificial Breeding, Nucleus Insertion and Pearl Culture Techniques of *Pinctada maxima* (Jameson)" which filled a vacancy in the pearl production of China (it is rewarded with National Science and Technology Advance Prize (Class 1)) and established the base for the large scale development of south pearl industries, "the king of pearl" and a large number of pearls were produced when the project was finished.



科技企业

科技服务公司



图为我所承接香港政府工程顾问研究委员会项目所摄

以我所科研创新体系为技术依托, 承揽政府、社会团体、企事业单位的决策、立项、评估等方面的咨询、研究, 为促进渔业经济建设和繁荣渔(农)村经济提供技术服务。1992~2002年, 共承接了60多个项目, 总收入约2000万元。这些项目包括水域环境评估、渔业资源调查、渔业发展规划、养殖工程与健康养殖技术等方面的内容。

Science and Technology Enterprises Science & Technology Services Company

Depending on the institute's innovation system, the company hires consultation and research projects works for the decision, project building and assessment of the government, social community, to provide technical services for promoting marine economic construction and booming the fishery (rural) economics. From 1992 to 2002, more than 60 projects were carried out and the total earning was about 20 million Yuan. These projects are involved with the assessment of waters environment survey of fishery resources, fishery develop planning, seed selection and breeding for cultivation, feed and health-culture techniques, and so on. Picture at side is taken when we bore the engineering consultation research project for Hongkong government.

饲料与健康养殖技术研究中心



中心以本所雄厚的科技力量为依托, 从事渔业生态环境微生物修复技术、水产健康养殖技术、水产动物营养生理、水产饲料绿色添加剂、水产饲料优化配方及水产饲料生产的研究和开发工作。年产微生物环境调节剂、微生物饲料添加剂、微生物肥料和绿色渔药系列等龙头产品逾千吨。通过不断研究和实践, 建立了由基础理论、科研技术和配套产品组合而成的水产品健康养殖新模式, 加强送科技下乡, 为促进水产养殖业的发展作出了重大贡献。

Feed & Healthy Culture Techniques Research and Development Center

Relying on the tremendous science and technology strength, the center undertakes the work concerning the microbe restore techniques of fishery ecological environment, health-culture technique for aquaculture, optimized formula of aquatic feed and the research of aquatic feed production and exploitation. More than 1000 tons of leading products were produced annually, including Microbe Environment Mediator, Microbe Feed Additive, Microbe Fertilizer as well as Green Fishery Drugs series product. Through continuous research and practices, the new health-culture model of aquatic products was invented consisting of basic theory, scientific research technique and asset products. This achievement contributes to the development of aquaculture industry gravely.

人才培养

科学技术的竞争说到底就是人才的竞争。本所一直把培养人才和开发人力资源作为首要任务来抓。采取的主要措施有:

- (1) 利用承担高层次的科研课题培养造就高层次人才。
- (2) 采用资助攻读在职博士和硕士, 选派资助到国内外著名高等学府、科研院所进行讲学、访问、进修、研修、培训, 资助参加国内外高等、高水平的学术交流活动等方式加速人才培养。
- (3) 发挥自身优势, 走联合培养人才之路。与上海水产大学、湛江海洋大学、华中农业大学、华南农业大学等联合培养硕士研究生, 建立一个联合培养博士点、三个联合培养硕士点。现有博士生导师1人, 硕士生导师14人; 博士和在职博士生12人, 硕士和在职硕士生23人。这不仅大大推进了本所高级人才的培养, 也为大学加大研究生培养力度做出贡献。此外, 本所还利用职业技能培训与专业技术讲座培训渔业从业者约3000人次, 为繁荣渔(农)村经济做出了突出的贡献。

Education

The competition of science and technology is the competition of talent at bottom. The institute regards the personnel training and exploitation of personnel resources as the most important task all the time. The main steps are:

- (1) To train the high class qualified scientists and technicians with high-level research projects.
- (2) In order to quicken the personnel training, to provide finance support for the staffs to continue on-the job MSc, Ph.D, give lectures, visit, attend advanced study, study and research and attend training, and to participate the high class and high level science intercourse in China or oversea.
- (3) To carried out joint personnel training program with self-advantage. To start Msc and Ph.D education program, cooperating with Shanghai Fishery University, Ocean University of Zhanjiang, Agricultural University of South China, and Agricultural University of Central China, construct a joint PhD student education program and 3 MSc student education programs. At present, there are 1 Ph.D Tutor and 14 MSc Tutors, and 12 full time/on-the-job Ph.D students, and 23 full time/on-the-job MSc students. It not only promotes the high-grade personnel training by a long way, but also contributes to strengthen the postgraduate education of the university. In addition, it contributes to the booming of fishery (agricultural) economics to train more than 3000 personnel times of fishery practitioner with professional skill training and professional technique lecture.



中国水产科学研究院

南海水产研究所

South China Sea fisheries Institute, Chinese Academic Fishery Science Research

学术交流



姜锡平所长在国际研讨会上与台湾省水产所所长“鱼都之父”廖一久、南海所康南升院士、东海所陈雪忠研究员合影



韩国新兴水产学院院长到所参观交流



美国圣市自然保护署顾问程所开展行学术交流



中、日、韩三国水产科技代表团在我所进行学术交流



中越水产养殖研讨会



智利水产养殖代表团来我所参观访问



挪威城市与地区研究所代表团来我所参观考察



印尼代表团在我所作学术交流



阿曼农渔部代表团参观我所



香港特区政府渔农处处长李新雄博士率团访问我所

科研

成果

大珠母贝 *Pinctada maxima* Jameson 人工育苗养殖及插育珠

1978年获全国科学大会奖, 1985年获农牧渔业部科技进步一等奖, 1987年获国家科技进步一等奖。

于1970年首次获得大珠母贝人工育苗成功, 创造了室内水池培育大量大珠母贝幼苗和海区养成技术, 该项技术在国内外居领先地位, 为发展大珍珠业奠定了基础。

大珠母贝插核育珠的研究1981年取得成功, 培育出我国第一颗商品大珍珠(规格19×15.5毫米, 重量6克, 银白色, 葡萄形), 该成果已在我国南方大范围推广应用。



Artificial Breeding, Nucleus Insertion and Pearl Culture Techniques of *Pinctada maxima* (Jameson)

It was awarded with National Science Congress Bonus in 1978, Science and Technology Advancement Prize by Agriculture, Animal Husbandry and Fishery Ministry (Class 1) in 1985, National Science and Technology Advancement Prize (Class 1) in 1987.

In 1970, the artificial breeding of *Pinctada maxima* (Jameson) succeeded for the first time. The techniques of batch pond culture of *Pinctada maxima* (Jameson) larvae and nurtrurance technique in the sea were invented. These techniques were ahead of counterparts in the world and established base for the development of big pearl industry.

The pearl cultivation with nucleus insertion technique was developed successfully in 1981. The first commercial big pearl was produced (Size: 19×15.5mm, Weight, 6g, Color, silvery white, Shape, grape). This achievement has been spread and applied in south China extensively.

鲢、鳙鱼人工控制池塘繁殖



1965年获国家科委发明奖(00019); 1978年获全国科学大会奖; 1979年获广东省科学大会奖。

本项目从1953年开始进行池塘养殖家鱼人工繁殖的研究, 采取流水刺激和催青方法于1958年6月成功地促使饲养于池中鲢、鳙鱼产卵孵化。嗣后, 采用此法, 又获得了草鱼、青鱼、鲢鱼(广东的主要养殖对象之一)池中人工繁殖成功。家鱼人工繁殖成功是世界创举, 是世界水产科学技术的重大发明创造, 从根本上改变了千百年来家鱼苗来源依赖于江河捕捞的历史, 大大地促进了淡水养殖事业和水产科学技术的发展, 为我国淡水养殖业的飞跃发展作出了巨大贡献。

Scientific Research Achievements

The Artificial Pond Breeding of Bighead (*Aristichthys nobilis*, Richardson, 1844) and Silver Carp (*Hypophthalmichthys molitrix*, Valenciennes, 1844)

It was awarded with National Science Committee Invention Bonus (00019) in 1965, National Science Congress Bonus in 1978, Science Congress Bonus of Guang dong in 1979.

This project was started from the research on the artificial breeding of the pond-cultured domesticated fish in 1953. In the June of 1958, the bighead and silver carp cultured in the pond spawned and hatched successfully after the flowing-water stimulation and hatch hastening. Then, the fry of *Mylopharyngodon plicatus*, *Ctenopharyngodon idellus* and *Cirrhia molitorella* were reproduced artificially with these techniques. The artificial breeding of domesticated fish was pioneering work in the world and the invention of great aquaculture science and technology in the world, and changed the history of the domesticated fish fry depending on the fishing in river for thousands of years. It contributed greatly to the rapid development of the fresh water culture in China.