

海洋与湖沼

(Haiyang Yu Huzhao)

第 53 卷

2022 年

总 目 次

第 1 期

“微观繁殖体”溯源	沈颂东	(1)
太平洋内部副热带-热带经向翻转环流的季节变化特征	韩 雪 冯俊乔	(8)
印度洋赤道潜流年际变化特征及其与印度洋偶极子的联系	李俊灵 徐 康 王卫强 谢 强	(19)
黑潮延伸体区跨等密度面湍流混合的次季节变化	闫晓梅 张林林 庞重光	(33)
2010~2019 年北黄海海域长序列海量温盐数据分析与处理方法	陈 晓 刘长华 刘志亮 王 旭 王春晓 贾思洋	(49)
南海西北部半日内潮参量次谐频不稳定生成的近惯性波研究	陈子飞 任 强 胡贺岗 陈永华 王 蓓 于 非 南 峰 王建丰 唐 瑛	(62)
乌梁素海沉水植物群落光谱特征及其受覆盖度的影响分析	杜雨春子 青 松 包玉海 郝艳玲	(74)
黄东海浮游生物群落呼吸率对碳平衡的重要性	叶文琪 刘诚刚 蔡昱明 翟红昌 乐凤凤 王 斌 寿 鹿 陈全震 杜 萍	(84)
海带渣资源化利用及在小球藻培养中的应用研究	王 铭 彭敏琳 许 瑾 梁翠谊 向文洲 李 涛	(96)
外来入侵海洋红藻牛岛薄膜藻 <i>Haraldiophyllum udoense</i> 的形态观察及 <i>rbcL</i> 基因序列分析	于雅楠 卞 瑶 董 浩 王宏伟	(106)
企鹅珍珠贝矿化基因表达模式和贝壳超微结构对珍珠质层颜色影响的研究	张佳谊 杨 蕾 陈 一 王爱民 战 欣	(113)
高体鲷 (<i>Seriola dumerili</i>) 线粒体全基因组测定及结构特征分析	王开杰 徐永江 崔爱君 柳学周 姜 燕 王 滨	(120)
基于低压变频电场技术对带鱼 (<i>Trichiurus lepturus</i>) 保鲜过程中微生物群落影响分析	史恬恬 谢 超 张家玮 李远慧 朱亚猛 吴玉婷 周卓颖 虞 舟	(133)
仿生态条件下星洲红鱼 (Singapore red tilapia) 和奥尼罗非鱼 (<i>Oreochromis niloticus</i>) 生长和肌肉营养特性的比较研究	林祥日	(141)
双锯鱼 (<i>Amphiprion</i>) 胚胎不同发育阶段和成鱼不同组织中内参基因的筛选及应用	李迎娣 孙志宾 马爱军 杨敬昆 刘志峰 于 宏 赵亭亭 常浩文 朱理光 刘诗颖 曲江波	(150)
凡纳滨对虾 (<i>Litopenaeus vannamei</i>) 不同品系生长与耐高盐性状配合力及杂种优势分析	王崇懿 王 伦 刘建勇 傅学丽	(161)
外源神经递质 5-羟色胺 (5-HT) 和多巴胺 (DA) 调控三疣梭子蟹争斗行为的初步研究	吴 波 张 顺 张 成 母昌考 徐善良 王丹丽	(168)
基于马氏珠母贝 (<i>Pinctada fucata</i>) 血细胞全长转录组数据补体样组分的鉴定与分析	王 菁 李桂英 林楷琪 欧 静 张淑瓶 王忠良	(176)
南海西沙群岛海域鳶乌贼 <i>Sthenoteuthis oualaniensis</i> 胃组织微塑料沉积特性研究	陆化杰 刘 凯 陈子越 宁 欣 王洪浩 何静茹 陈炫妤	(187)
基于无人机高光谱遥感技术对内陆养殖池塘水质监测的研究	刘 梅 马启良 原居林 倪 蒙 练青平 郭爱环	(195)
基于权重赋值法与灰色聚类法评价虾蛭串联养殖池塘的生态修复效果	鲍格格 赵淳朴 梅泊承 张 顺 徐善良 徐继林	(206)
利用核酸适配体的竞争置换作用检测溶藻弧菌 (<i>Vibrio alginolyticus</i>)	林筱钧 彭英林 鄢庆彬 江兴龙 周建传 汤学敏 范云庭 郑 江	(215)
利用代谢组学揭示脱落酸对高温胁迫龙须菜 (<i>Gracilaria lemaneiformis</i>) 的作用机制	罗素雅 虞新磊 陈琼琳 刘士霞 徐年军 孙 雪	(224)
两种混养方式对异枝江蓠 (<i>Gracilaria bailinae</i>) 生长性能、表面附生细菌群落及抗生素抗性基因的影响	李 雯 张明清 赖星星 张翠萍 覃伟健 杨金霖 朱雅婷 舒 琥	(235)

第 2 期

印度洋浮游生态系统的特点及其对全球变暖的响应	张武昌 赵 苑 董 逸 李海波 赵 丽 肖 天 (247)
地表高程监测在滨海蓝碳收支评估中的应用	陈鹭真 (261)
2013~2019 年渤海夏季高温现象及机制分析	郭世安 张海彦 魏 皓 赵 亮 (269)
东海黑潮上下游不同的涡动能季节变化特征及其产生机制	王思雯 杨 洋 梁湘三 赵宇慧 王长友 (278)
2020 年特大洪水作用下长江口南槽水沙输移特征	吴增斌 郭磊城 吴雪枫 何 青 (295)
基于 ADCP 回声的黑潮-亲潮混合区浮游动物昼夜垂直迁移研究	李 琦 陈朝晖 (305)
基于双还原体系与膜进样质谱快速测定 ^{15}N 加富水样中 $^{15}\text{NO}_3^-$ 的方法	罗 畅 宋国栋 刘素美 (320)
流式影像仪在东海海域甲藻藻华研究中的应用	胡晓坤 赵 越 孔凡洲 张清春 严 冰 于仁成 (330)
米氏凯伦藻胞内多聚磷酸盐对环境磷变化的响应研究	金文育 姚炜民 欧林坚 郑立极 (340)
海带褐藻多酚对绿烂海带表面分离的一株细菌的抑菌效果研究	李 静 逢少军 苏 丽 李晓东 (346)
八门湾红树林土壤放线菌多样性及抗病原菌活性分析	刘 敏 车文学 边伟杰 甘禧霖 赵怀宝 (352)
印度洋深海热液区贻贝足丝结构和性能特征研究	谢林青 曹 为 蒋凤华 李景喜 孙承君 (364)
雷州半岛沿海岸域浮游桡足类的分布特征及其影响因素	彭宇航 张才学 孙省利 郑金容 刘耀谦 姚 昕 (375)
三门湾游泳动物群落结构与生物多样性研究	马路阔 陈全震 程方平 彭 欣 陈伟峰 曾江宁 史西志 黄 伟 (384)
基于全基因组重测序技术的浙江近岸海域耐盐金黄色葡萄球菌(<i>Staphylococcus aureus</i>)耐药机制解析	张旨轩 王子言 王 泽 刘 岩 刘松怡 钱鹏宇 叶 欢 韩姣姣 周 君 苏秀榕 (394)
厚壳贻贝(<i>Mytilus coruscus</i>)中抗生素耐受细菌多样性研究	栗洋洋 贾梦雪 王锦乙 吴紫琪 羊妍珂 严小军 廖 智 何建瑜 (405)
运输方式对马氏珠母贝(<i>Pinctada fucata</i>)稚贝存活率、生长、消化及抗氧化性能的影响探究	李娇妮 廖秀睿 李 曦 吕 布 杨守国 臧 战 VASQUEZ Herbert Ely 王爱民 郑 兴 顾志峰 (414)
越冬对池塘种养模式下中华鳖(<i>Trionyx sinensis</i>)机体形态、血清生化、脏器相关功能酶活力及肌肉和裙边物性的影响	李有志 牟恩璇 申屠琰 朱卫东 赵蓓蓓 王志铮 (421)
三峡库区短颌鲚(<i>Coilia brachygnathus</i>)新建种群的年龄结构、生长特征及遗传多样性分析	陈辙聿 陶怡曦 叶 勤 王 果 王文波 范士琦 何 春 李 云 (430)
基于低压核磁共振(LF-NMR)技术对东海带鱼(<i>Trichiurus lepturus</i>)保鲜品质及水分迁移特性的研究	周卓颖 谢 超 俞群娣 张家玮 郑霖波 郑 炜 叶常青 (440)
温度对金红色大鳞副泥鳅(<i>Paramisgurnus dabryanus</i>)孵化、仔鱼活力和性别分化的影响	马本贺 王海华 马爱军 黄智慧 李燕华 王梦杰 孙志宾 (448)
植物乳杆菌(<i>Lactobacillus plantarum</i>)对云龙石斑鱼生长、抗氧化性能及血清生化水平的影响	李忠琴 邹文政 张光明 杨求华 庄若飞 乔欣君 江兴龙 (457)
凡纳滨对虾(<i>Litopenaeus vannamei</i>)循环水养殖系统中养殖效果及菌群结构和功能研究	唐亚鹏 董世瑞 田吉腾 周 茜 王印庚 张天时 (466)
缢蛭 <i>HAT</i> 基因家族的全基因组鉴定及在环境因子、细菌胁迫下的表达分析	练佳莹 吕丽媛 姚韩韩 董迎辉 林志华 (475)
南麂列岛中华蛸(<i>Octopus sinensis</i>)形态与遗传多样性分析	李嘉华 陈 舜 陈万东 谢尚微 倪孝品 郑小东 (486)
大西洋热带海域长鳍金枪鱼渔场预报模型的比较	宋利明 任士雨 洪依然 张天蛟 隋恒寿 李 彬 张 敏 (496)
黄河口及其邻近水域春季东亚江豚分布规律	程兆龙 于国旭 李永涛 左 涛 牛明香 王 俊 (505)

第 3 期

珠江磨刀门河口潮波振幅梯度与上下游动力边界的关系异变研究	李 博 杨 昊 欧素英 蔡华阳 刘 锋 杨清书 (513)
主流海表风场资料在舟山群岛近海的性能评估	刘紫薇 赵帅康 魏笑然 白晔斐 (528)
基于地球系统模式 FIO-ESM v2.0 对 1850~2014 年大西洋经向翻转环流变化的研究	曹 茜 董昌明 夏长水 (538)
冬季不同背景风场下边界层云对东海黑潮锋的响应个例研究	高 畅 张苏平 衣 立 张银意 (557)
静水压力变化对 NTC 热敏电阻器电学特性影响	刘遵京 王军华 汤新强 霍 鹏 刘 熠 姚金城 常爱民 (569)

基于大量卫星图像研究青岛汇泉湾海滩近 40 年的地形地貌演变.....张晓东 姚雨涵 朱龙海 胡日军 吴 闯 (578)

南海 F 站位冷泉水体中的溶解甲烷.....张 永 臧晚莹 杨 庶 (590)

近海养殖水体溶解性有机质的荧光特征及环境指示意义.....吴 峰 宋秀贤 池连宝 王文涛 俞志明 (597)

黄河三角洲潮上带和潮间带不同生境微塑料分布规律.....宋 劼 易雨君 周 扬 高艳宁 (607)

改性粘土对虾夷扇贝(*Mizuhopecten yessoensis*)体内麻痹性贝毒的影响.....孟晓君 宋秀贤 张 悦 宋维佳 张培培 申慧慧 俞志明 (616)

神经毒素 BMAA 对球等鞭金藻(*Isochrysis galbana*)的生长抑制作用研究.....李爱峰 刘建伟 胡 杨 付艺蕾 邱江兵 (625)

两种孔径网具对大洋微(小)型浮游植物调查结果的影响——以西南印度洋海域第 34 次大洋春季航次为例...郭卓然 冷天泽 陆斗定 戴鑫烽 (637)

基于高通量测序的象山港水域细菌多样性的研究.....刘 岩 李志恩 袁一鸣 张 真 钱鹏宇 叶 欢 刘松怡 王 泽 韩姣姣 周 君 苏秀榕 (645)

越冬对池塘专养模式下中华鳖(*Trionyx sinensis*)形质的影响特征.....曲 涛 申屠琰 牟恩璇 李有志 朱卫东 王志铮 (654)

基于深度学习的循环水养殖鳗鲡(*Anguilla*)计数研究.....李 凯 江兴龙 陈尔康 陈 彭 许志扬 林 茜 (664)

虎龙杂交斑(*Epinephelus lanceolatus*♂×*E.fuscoguttatus*♀)对 20 种常见氨基酸的嗅发电生理反应.....徐文丹 王骥腾 韩 涛 严小军 (675)

浙江三门湾鱼卵、仔稚鱼群聚结构时空变化研究.....邱科程 张荣良 晁 敏 程方平 曾江宁 彭 欣 冯志华 陈全震 徐旭丹 黄 伟 (684)

中华乌塘鳢(*Bostrychus sinensis*)GPx7 和 GPx8 基因的克隆、表达与酶活性分析.....丁 浪 夏立萍 沈 斌 张建设 (697)

罗氏沼虾(*Macrobrachium rosenbergii*)雌雄虾不同形态阈值性状的遗传变异分析.....王靖文 杨国梁 孔 杰 夏正龙 隋 娟 唐琼英 罗 坤 代 平 孟宪红 陈丽梅 栾 生 (710)

缢蛭混养对三疣梭子蟹-日本囊对虾综合养殖系统理化环境和小型底栖动物的影响.....柴欣如 许文军 张东旭 何 杰 刘慧玲 (718)

基于优化模型的莱州湾三疣梭子蟹(*Portunus trituberculatus*)栖息地适宜性研究.....张孝民 王秀霞 李少文 杨艳艳 徐炳庆 李 凡 (726)

标记方法对皱纹盘鲍(*Haliotis discus hannai*)生理、生长及存活性状的影响.....张远帆 唐君玮 仇佳文 葛红星 吴富村 张国范 (735)

三种扇贝挥发性风味物质指纹图谱分析.....崔明仙 李 妍 付晴晴 景福涛 陈希盼 张恩烁 李 赞 徐晓辉 冯艳微 孙国华 李 彬 王卫军 杨建敏 (743)

茎柔鱼(*Dosidicus gigas*)脂肪积累对其 4 个组织能量积累贡献的研究.....冯艺璇 宋 维 林东明 (759)

西太平洋杜氏枪鱿(*Uroteuthis duvaucelii*)群体形态差异分析.....吕玉晗 张 弛 戴了疑 何卫彤 郑小东 (768)

基于肥满度-最大养殖收益的底播养殖虾夷扇贝(*Patinopecten yessoensis*)养殖容量评估及养殖区区划.....南学良 魏 皓 蒋增杰 张海彦 聂红涛 (778)

第 4 期

前言.....尤再进 尹宝树 (789)

研究综述

海滩养护动力地貌基础理论与关键技术研究述评.....郑金海 张 弛 (791)

渗流与侧向流共同作用下的潮沟边壁侵蚀研究进展.....龚 政 王客予 赵 堃 张凯丽 (797)

生态海岸防护工程研究进展与展望.....易雨君 刘 奇 王雪原 季则舟 (806)

非静压水波模型研究综述.....马玉祥 艾丛芳 董国海 (813)

研究论文

无限水深下波浪与二维水面物体作用的简单格林函数方法.....滕 斌 于 梅 (822)

基于与环境相协调的韧性海岸工程建设策略.....季则舟 (830)

厦门湾海洋塑料垃圾的运动特性及输移机理.....宁德志 袁泽林 潘 钟 陈丽芬 张崇伟 马嘉骏 (838)

近岸水体中海洋雪对细颗粒微塑料沉降过程影响的实验研究.....张金凤 梁家雄 祁 航 张庆河 (852)

近 20 年台风事件对黄渤海颗粒有机碳季节性的影响.....王秀君 王晓雯 尤再进 石洪源 (861)

珠江口鸡啼门近海海洋对台风的响应·····	陈杏文	邱春华	张恒	刘东	石慧	马永贵	王东晓	(872)		
铁山湾内天文潮对风暴潮水位的影响研究·····				杨万康	冯兴如	尹宝树	杨青莹	(882)		
废黄河口海域的悬沙输运机制研究·····	郭瑾	邢飞	闫玉茹	李占海	朱庆光	汪亚平		(891)		
海口湾东部海域淤积趋势机制分析·····										
·····	曹永港	白玉川	陈宜展	邓丹	欧阳永忠	冯砚青	江林	廖世智	肖志建	(906)
人工岬角和海滩养护下泥沙输运与海床演变·····					韩雪健	匡翠萍	宫立新	李文斌		(917)
风暴浪作用下沙质岸滩稳定机制物理模型试验研究·····					王俊	尤再进	梁丙臣			(933)
渗透潜堤对沙滩剖面演化影响的物理模型试验研究·····										
·····	伊锋	房克照	孙家文	王平	吴浩	尤再进	李彬			(951)
双消浪室局部开孔沉箱防波堤反射特性的理论与试验研究·····	王心玉	赵晶	王海峰	王绿卿	刘勇					(960)
基于无监督机器学习的胶州湾海底工程环境适宜性综合评价·····										
·····	杜星	孙永福	董杰	王青	宋玉鹏	苏志明	张莞君			(972)
渤海海域冰水共存期的波能流密度推算·····										
·····	张娜	王立涛	耿姗姗	张庆河	尤再进	李帅	许宁	许钊		(981)
渤海和黄海北部波高与周期联合分析·····						李佳谦	邵珠晓	梁丙臣		(990)
杭州湾北部实测波浪特征·····				杨斌	杨万康	谢华伟	黄赛花			(999)
基于 ERA5 再分析数据的中国邻近海域极端波高特征分析·····	杜文彦	张旭日	张丽丽	尤再进	石洪源					(1007)
海洋重现期波高统一化计算方法·····						尤再进				(1015)

第 5 期

基于漂流浮标观测分析日本福岛以东表层海洋物质的散播轨迹	卢 锡	胡石建	王 凡	胡敦欣	刘海龙	刁新源	于仁成	(1027)			
北印度洋风暴潮特征及其对气候信号的响应研究	谢建斌	万纬祺			冯兴如	尹宝树	刘亚豪	(1045)			
基于 2005~2019 年卫星遥感观测的南大洋印度洋扇区中部涡旋特征分布研究			李 等	程灵巧	严晨冰	张春玲	胡 松	(1054)			
一种新的模式倾向误差估计算法及其在 ENSO 模拟中的应用			何 群		高艳秋	唐佑民	张继才	(1067)			
海洋沉积物孔隙水中痕量金属元素的测试分析方法											
	王小静	刘洪娜	任艺君	武鸿达	张 颖	刘季花	李 力	(1079)			
芽孢杆菌(<i>Bacillus</i>)及其复合粘土对典型赤潮生物的去作用研究											
		钟雨霞	俞志明		刘姗姗	曹西华	宋秀贤	(1089)			
南黄海首次暴发“巨囊”生态型球形棕囊藻藻华											
	张清春	向 玲	王锦秀	刘 扬	宋敏杰	王云峰	孔凡洲	耿慧霞	颜 天	于仁成	(1098)
夏季南黄海浮游甲壳动物死体比例的初步研究				王明飞	庄昀筠	葛汝平	陈洪举	刘光兴	(1108)		
对虾池塘养殖过程中纤毛虫的动态变化及改性粘土防控初探					刘正宇	俞志明	宋秀贤	曹西华	(1121)		
麻痹性贝毒在毛蚶体内的转化过程研究					林卓如	耿慧霞	唐文娇	于仁成	(1131)		
鲤疱疹病毒 2 型(CyHV-2)灭活疫苗制备及其免疫效力测定											
	潘晓艺	蔺凌云	朱 悦	姚嘉赟	尹文林	刘忆瀚	陈 凡	沈锦玉	(1143)		
大黄鱼 <i>STAT6</i> 分子特征及其在溶藻弧菌感染后表达模式研究											
		袁晓琴	陈 友	荣 毅	孟钰帆	任超群	母尹楠	陈新华	(1151)		
两种池养模式下异育银鲫(<i>Carassius auratus gibelio</i>)生物学表型对体质量影响效果的差异分析											
			陈 雨	戎华南	刘哲宇	陈汉春	王志铮	(1161)			
红树林下人工笼养中华乌塘鳢(<i>Bostrychus sinensis</i>)肌肉营养成分的分析与评价											
		李元跃	李容伟	陈融斌	陈政强	林沛然	肖 震	王秋荣	(1170)		
大口黑鲈(<i>Micropterus salmoides</i>)致病性维氏气单胞菌的分离鉴定及其特性分析											
	雷 宁	郝贵杰	黄爱霞	王雨辰	林 锋	沈小明	朱俊杰	(1180)			
投喂频率对凡纳滨对虾(<i>Litopenaeus vannamei</i>) PI3K 信号通路及糖代谢相关酶基因表达的影响											
	赵楠楠	崔彦婷	王忠凯	王 聪	张志豪	邓之通	赵瑞阳	孙金凤	王仁杰	李玉全	(1189)
三疣梭子蟹(<i>Portunus trituberculatus</i>)的保活参数优化及其代谢响应											
		曾廷兰	陈 燕	母昌考	王春琳	史 策	叶央芳	(1197)			
罗氏沼虾(<i>Macrobrachium rosenbergii</i>)初次性成熟性腺发育的组织学观察											
	陈国柱	钟镇霄	杨旻珉	邢钱钱	夏正龙	唐琼英	易少奎	蔡缪荧	杨 杰	杨国梁	(1208)
增殖放流影响下东海北部海域三疣梭子蟹(<i>Portunus trituberculatus</i>)最大可持续产量评估											
						杨春蕙	刘 琦	王迎宾	(1219)		
棘皮动物育种数据管理与分析平台的开发及应用											
	李 彬	王卫军	王扬帆	孙国华	徐晓辉	冯艳微	李 赞	崔翠菊	杨建敏	(1225)	

东太平洋赤道海域茎柔鱼(*Dosidicus gigas*)小型群体资源分布及其渔场环境特征..... 玄文丹 崔国辰 李 哲 魏裙倚 陶迎新 刘连为 陈 峰 陈新军 朱文斌 (1234)

中华鲎(*Tachypleus tridentatus*)稚鲎对不同比例泥沙类型选择行为特征..... 应紫薇 李银康 颜晓勇 (1242)

基于碳氮稳定同位素的西北印度洋鸢乌贼摄食习性研究..... 陈 静 陆化杰 王 芮 欧玉哲 陈新军 (1250)

硖洲岛大型海藻场软体动物群落季节演替及其与环境因子的关系..... 姚 昕 孙省利 张才学 廖海晴 彭宇航 (1258)

浙江三门湾海域主要底上动物生态位及种间联结性..... 孟 周 魏永杰 王晓波 韩庆喜 (1269)

利用 BP 神经网络标准化东南太平洋茎柔鱼(*Dosidicus gigas*)资源丰度..... 林泓羽 汪金涛 陈新军 (1279)

我国海水养殖生态效率影响因素分析..... 张 莹 韩立民 秦 宏 (1288)

第 6 期

南海中尺度涡对深层流调控作用的个例研究..... 邹 童 徐勤博 周 春 张冬青 (1299)

南太平洋和南印度洋南极模态水潜沉率的长期变化趋势..... 刘 凯 高 山 侯颖琳 赵 军 王 凡 (1311)

台风“灿鸿”对长江口外海域悬浮体分布的影响..... 龙小志 王珍岩 (1322)

黄海绿潮生消过程及其主导因素..... 王 圣 赵 亮 张海彦 李 菲 (1338)

基于无人机低空拍摄图像的垃圾监测——以青岛石雀滩为例..... 邱琰皓 张 芳 (1349)

固相萃取法提取典型海水溶解有机质及其红外光谱和固态 ¹³C 核磁共振表征..... 武奕鑫 王孝聪 周振淞 何 晨 潘良浩 宋桂雪 (1360)

高效液相色谱-串联质谱法同时测定海洋沉积物中 27 种有机磷酸酯..... 石 仞 张 蓬 曹胜凯 邢戎光 纪 浩 葛林科 张翠荣 (1370)

夜光藻配子细胞实时荧光定量 PCR 检测方法的建立与应用..... 张樱馨 宋书群 李才文 (1385)

福建福宁湾表层沉积物中甲藻孢囊分布与多样性研究..... 王朝晖 郑 虎 王文婷 谢昌良 暨双辉 张宇宁 (1396)

獐子岛海域和胶州湾表层微微型浮游植物丰度和生物量的季节变化比较..... 李苏恒 董 逸 赵 苑 孙晓霞 张光涛 赵 丽 张武昌 肖 天 (1405)

2021 年秦皇岛近岸典型海域浮游植物群落结构的时空变化特征..... 马 新 徐金涛 杨 雯 李微微 谭法启 王 众 李欣阳 (1415)

海洋寄生甲藻血卵涡鞭虫生活史及温度对其发展的影响..... 吕晓阳 黄 骞 李 蒙 刘炜鑫 李才文 (1430)

莱州湾近岸海域浮游纤毛虫群落组成和季节变化..... 李雯璐 徐大鹏 季道德 (1441)

浙江南部近海春季鱼类群落结构特征及其年际变化..... 王 寅 赵 静 高春霞 王士聪 叶 深 (1455)

草鱼(*Ctenopharyngodon idellus*)出血病二价细胞灭活疫苗体液免疫效果及免疫保护率评价研究..... 郝贵杰 林 锋 黄爱霞 叶 霆 姚嘉赞 潘晓艺 袁雪梅 徐 磊 胡金春 沈锦玉 (1467)

香鱼(*Plecoglossus altivelis*)致病性类志贺邻单胞菌的分离与生化药敏鉴定..... 阚宏玉 苗 亮 杜 杨 李明云 巩晓琳 李文雅 孙振南 石海瑞 张立宁 (1476)

五种中草药复方体外激活花鳗鲡(*Anguilla marmorata*)外周血白细胞活性的评价..... 李忠琴 张新艳 杨求华 林 茂 江兴龙 翟少伟 (1487)

横带髯鲷(*Haplogenyus mucronatus*)仔鱼饥饿不可逆点及摄食生长特性研究..... 付铁中 平洪领 张 涛 史会来 何 杰 李 彬 (1494)

不同铁水平饲养对大菱鲆(*Scophthalmus maximus*)生长及耐低氧能力影响的研究..... 王庆敏 黄智慧 马爱军 孙志宾 王新安 刘志峰 徐荣静 (1503)

抗大口黑鲈(*Micropterus salmoides*)蛙虹彩病毒药效模型的构建及其抗病毒中药筛选..... 李秋语

黄小红 郝贵杰 胡大雁 张成赛 牛 晨 袁雪梅 黄 雷 于 喆 姚嘉赞 杨桂连 姜建湖 (1513)

赤点石斑鱼(*Epinephelus akaara*)精子超微结构及环境因子对精子活力的影响..... 朱雅婷 张明清 吴好莘 赵会宏 张海发 舒 琥 (1523)

褐菖鲈(*Sebastiscus marmoratus*)幼鱼生物学表型对体质量的影响效应..... 滕娴雅 蒋宏雷 李有志 斯烈钢 王志铮 (1531)

皱纹盘鲍(*Haliotis discus hannai*)不同群体贝壳形态和相对生长变异研究..... 仇佳文 唐君玮 张远帆 魏 敏 张国范 吴富村 (1539)

虎斑乌贼(*Sepia pharaonis*)FMRamide G 蛋白偶联受体基因的克隆与表达定位研究..... 郭祖霆 朱 阳 曹慧敏 李 双 周 旭 迟长凤 苗增良 (1548)

海洋线虫 *Litoditis marina* 早期发育的转录组分析..... 王彤彤 张留所 (1558)

热带典型珊瑚岛礁海洋牧场花刺参底播增殖容量及其生态效应预测..... 马文刚 尹洪洋 孙春阳 王兆国 魏一凡 冯博轩 奉 杰 许 强 李秀保 王爱民 (1573)

浙江舟山海域大型底栖动物群落组成及主要影响因子分析..... 宋 晨 许丽婷 王晓波 孟 周 韩庆喜 (1585)

OCEANOLOGIA ET LIMNOLOGIA SINICA

(Haiyang Yu Huzhao)

Vol.53 2022

CONTENTS

No.1

Brief Introduction of Micropropagule	SHEN Song-Dong	(7)
Seasonal Variability of Subtropical–Tropical Meridional Overturning Circulation in the Pacific		
..... HAN Xue, FENG Jun-Qiao		(18)
Interannual Variability of Indian Ocean Equatorial Undercurrent and Its Link to the Indian Ocean Dipole		
..... LI Jun-Ling, XU Kang, WANG Wei-Qiang, XIE Qiang		(32)
Subseasonal Variation of Turbulent Diapycnal Mixing in the Kuroshio Extension Region		
..... YAN Xiao-Mei, ZHANG Lin-Lin, PANG Chong-Guang		(48)
Analysis and Processing of Long Sequence and Massive Temperature and Salinity Data of the North Yellow Sea from 2010 to 2019		
..... CHEN Xiao, LIU Chang-Hua, LIU Zhi-Liang, WANG Xu, WANG Chun-Xiao, JIA Si-Yang		(61)
Semidiurnal Tide Parametric Subharmonic Instability Induced Near-Inertial Waves in Northwestern South China Sea	CHEN Zi-Fei, REN Qiang,	
HU He-Gang, CHEN Yong-Hua, WANG Bei, YU Fei, NAN Feng, WANG Jian-Feng, TANG Ying		(73)
Spectral Features of Submerged Aquatic Vegetation Under Coverage Impact in the Ulansuhai Lake		
..... DU Yu-Chunzi, QING Song, BAO Yu-Hai, HAO Yan-Ling		(83)
The Importance of Plankton Community Respiration Rate to Carbon Flux Balance in the Yellow and East China Sea	YE Wen-Qi, LIU Cheng-Gang, CAI Yu-Ming,	
ZHAI Hong-Chang, LE Feng-Feng, WANG Bin, SHOU Lu, CHEN Quan-Zhen, DU Ping		(95)
Resource Utilization of Kelp Residue and Application in <i>Chlorella</i> Culture		
..... WANG Ming, PENG Min-Lin, XU Jin, LIANG Cui-Yi, XIANG Wen-Zhou, LI Tao		(105)
Morphological and <i>rbcL</i> Gene Sequence Analyses on Invasive Marine Red Algae, <i>Haraldiphyllum Udoense</i>		
..... YU Ya-Nan, BIAN Yao, DONG Hao, WANG Hong-Wei		(112)
Effect of Gene Expressions and Shell Ultrastructure on the Color of Nacreous Layer in <i>Pteria Penguin</i>		
..... ZHANG Jia-Yi, YANG Lei, CHEN Yi, WANG Ai-Min, ZHAN Xin		(119)
Complete Sequence and Gene Organization of the Mitochondrial Genome of <i>Seriola dumerili</i>		
..... WANG Kai-Jie, XU Yong-Jiang, CUI Ai-Jun, LIU Xue-Zhou, JIANG Yan, WANG Bin		(132)
Effect of Low-voltage Alternating Frequency Electric Field on Microbial Community of Hairtail <i>Trichiurus lepturus</i> During Preservation	SHI Tian-Tian, XIE Chao,	
ZHANG Jia-Wei, LI Yuan-Hui, ZHU Ya-Meng, WU Yu-Ting, ZHOU Zhuo-Ying, YU Zhou		(140)
Comparison in Growth and Muscle Nutrition of Singapore Red Tilapia and <i>Oreochromis niloticus</i> Under Simulated Ecological Conditions	LIN Xiang-Ri	(149)
Screening and Application of Reference Gene in Anemone Fish (<i>Amphiprion</i>) Embryos in Different Development Stages and Adult Tissues	LI Ying-Di, SUN Zhi-Bin, MA Ai-Jun, YANG Jing-Kun, LIU Zhi-Feng,	
YU Hong, ZHAO Ting-Ting, CHANG Hao-Wen, ZHU Li-Guang, LIU Shi-Ying, QU Jiang-Bo		(160)
Analysis of Combining Ability and Heterosis on Growth Trait and Salinity Tolerance of Different <i>Litopenaeus vannamei</i> Populations	WANG Chong-Yi, WANG Lun, LIU Jian-Yong, FU Xue-Li	(167)
Preliminary Study on the Regulation of Agonistic Behavior of <i>Portunus trituberculatus</i> by Exogenous 5-HT and DA	WU Bo, ZHANG Shun, ZHANG Cheng, MU Chang-Kao, XU Shan-Liang, WANG Dan-Li	(175)
Identification and Analysis of Complement-like Components in <i>Pinctada fucata</i> Based on the Full-length Transcriptome Sequence Datasets		
..... WANG Jing, LI Gui-Ying, LIN Kai-Qi, OU Jing, ZHANG Shu-Ping, WANG Zhong-Liang		(186)

Characteristics of Microplastic Gastric Content in <i>Sthenoteuthis oualaniensis</i> from the South China Sea	
LU Hua-Jie, LIU Kai, CHEN Zi-Yue, NING Xin, WANG Hong-Hao, HE Jing-Ru, CHEN Xuan-Yu	(194)
Water Quality Monitoring of Inland Aquaculture Ponds Based on UAV Hyperspectral Remote Sensing Technology	
LIU Mei, MA Qi-Liang, YUAN Ju-Lin, NI Meng, LIAN Qing-Ping, GUO Ai-Huan	(205)
Assessment of Ecological Restoration in Tandem Aquaculture of <i>Litopenaeus vannamei</i> and <i>Sinonovacula constricta</i> Based on Weight Assignment and Grey Clustering Methods	
BAO Ge-Ge, ZHAO Chun-Pu, MEI Bo-Cheng, ZHANG Shun, XU Shan-Liang, XU Ji-Lin	(214)
Detection of <i>Vibrio alginolyticus</i> Based on Competition and Substitution Reactions Related to Aptamer	
LIN Xiao-Jun, PENG Ying-Lin, YAN Qing-Pi, JIANG Xing-Long, ZHOU Jian-Chuan, TANG Xue-Min, FAN Yun-Ting, ZHENG Jiang	(223)
Metabolomics Revealed the Potential Mechanism of Abscissic Acid in <i>Gracilariopsis lemaneiformis</i> Under High Temperature Stress	
LUO Su-Ya, YU Xin-Lei, CHEN Qiong-Lin, LIU Shi-Xia, XU Nian-Jun, SUN Xue	(234)
Effects of Two Types of Polyculture Mode on Growth Performance, Surface Epiphytic Bacterial Community and Antibiotic Resistance Genes of <i>Gracilaria bailinae</i>	
LI Wen, ZHANG Ming-Qing, LAI Xing-Xing, ZHANG Cui-Ping, QIN Wei-Jian, YANG Jin-Lin, ZHU Ya-Ting, SHU Hu	(245)

No.2

Review on Planktonic Ecosystem of Indian Ocean and Its Response to Global Warming	
ZHANG Wu-Chang, ZHAO Yuan, DONG Yi, LI Hai-Bo, ZHAO Li, XIAO Tian	(260)
Application of Surface Elevation Table for Carbon Budget Assessments in Coastal Blue Carbon Ecosystems	
CHEN Lu-Zhen	(268)
Summer High Temperature Phenomenon and its Mechanisms in the Bohai Sea from 2013 to 2019	
GUO Shi-An, ZHANG Hai-Yan, WEI Hao, ZHAO Liang	(277)
Distinctly Different Seasonal Eddy Kinetic Energy Variations and Their Mechanisms in the Upstream and Downstream Kuroshio Within the East China Sea Sector	
WANG Si-Wen, YANG Yang, LIANG Xiang-San, ZHAO Yu-Hui, WANG Chang-You	(294)
A Field Study of Hydrodynamics and Sediment Transport in the South Passage of the Changjiang River Estuary During Big River Flood in July 2020	
WU Zeng-Bin, GUO Lei-Cheng, WU Xue-Feng, HE Qing	(304)
Diel Vertical Migration of Zooplankton in the Kuroshio-Oyashio Mixed Zone Based on ADCP Echo	
LI Qi, CHEN Zhao-Hui	(319)
Determination of $^{15}\text{NO}_3^-$ in ^{15}N -Enriched Water Samples Based on Double Reduction System in Membrane Injection Mass Spectrometry	
LUO Chang, SONG Guo-Dong, LIU Su-Mei	(329)
Application of FlowCam in the Study of a Dinoflagellate Bloom in the East China Sea	
HU Xiao-Kun, ZHAO Yue, KONG Fan-Zhou, ZHANG Qing-Chun, YAN Bing, YU Ren-Cheng	(339)
Response of Intracellular Polyphosphate in <i>Karenia mikimotoi</i> to the Variation of Phosphorus in the Environment	
JIN Wen-Yu, YAO Wei-Min, OU Lin-Jian, ZHENG Li-Ji	(345)
The Antibacterial Activity of Phlorotannins Against a Bacteria Isolate from Brown Alga <i>Saccharina japonica</i> Suffered with Green-Rotten Disease	
LI Jing, PANG Shao-Jun, SU Li, LI Xiao-Dong	(351)
Diversity and Antimicrobial Activity of Actinobacteria in the Soil of the Bamenwan Mangrove in Hainan, China	
LIU Min, CHE Wen-Xue, BIAN Wei-Jie, GAN Xi-Lin, ZHAO Huai-Bao	(363)
The structure and Performance of Mussel Byssus in the Deep-Sea Hydrothermal Area of the Indian Ocean	
XIE Lin-Qing, CAO Wei, JIANG Feng-Hua, LI Jing-Xi, SUN Cheng-Jun	(374)
Distribution Characteristics of Planktonic Copepods and Its Influencing Factors in the Coastal Waters off Leizhou Peninsula	
PENG Yu-Hang, ZHANG Cai-Xue, SUN Xing-Li, ZHENG Jin-Rong, LIU Yao-Qian, YAO Xin	(383)
Analysis of Community Structure and Biodiversity of Nekton in the Sanmen Bay	
MA Lu-Kuo, CHEN Quan-Zhen, CHENG Fang-Ping, PENG Xin, CHEN Wei-Feng, ZENG Jiang-Ning, SHI Xi-Zhi, HUANG Wei	(393)

Analysis of the Drug Resistance Mechanism of <i>Staphylococcus aureus</i> Based on Whole-genome Resequencing Technology	ZHANG Zhi-Xuan, WANG Zi-Yan, WANG Ze,	
LIU Yan, LIU Song-Yi, QIAN Peng-Yu, YE Huan, HAN Jiao-Jiao, ZHOU Jun, SU Xiu-Rong (404)		
Diversity of Antibiotic Resistant Bacteria in <i>Mytilus coruscus</i>	LI Yang-Yang,	
JIA Meng-Xue, WANG Jin-Yi, WU Zi-Qi, YANG Yan-Ke, YAN Xiao-Jun, LIAO Zhi, HE Jian-Yu (413)		
The Effect of Transportation Mode on Survival, Growth, Digestion and Antioxidant Capacity of <i>Pinctada fucata</i> Juveniles	LI Jiao-Ni, LIAO Xiu-Rui, LI Xi, LYU Bu,	
YANG Shou-Guo, ZANG Zhan, VASQUEZ Herbert Ely, WANG Ai-Min, ZHENG Xing, GU Zhi-Feng (420)		
Effects of Overwintering on Body Morphology, Serum Biochemistry, Activity of Functional Enzymes Related to Viscera, and Physical Properties of Muscle and Skirt of <i>Trionyx sinensis</i> in Pond Culture Mode		
.....LI You-Zhi, MU En-Xuan, SHENTU Yan, ZHU Wei-Dong, ZHAO Bei-Bei, WANG Zhi-Zheng (429)		
Age Structure, Growth Characteristics and Genetic Diversity of Newly-established Population of Shortjaw Anchovy (<i>Coilia brachygnathus</i>) in the Three Gorges Reservoir Area	CHEN Zhe-Yu,	
TAO Yi-Xi, YE Qin, WANG Guo, WANG Wen-Bo, FAN Shi-Qi, HE Chun, LI Yun (439)		
Study on Preservation and Water Retention in Hairtail <i>Trichiurus lepturus</i> from the East China Sea in LF-NMR Technology	ZHOU Zhuo-Ying,	
XIE Chao, YU Qun-Di, ZHANG Jia-Wei, ZHENG Lin-Bo, ZHENG Wei, YE Chang-Qing (447)		
Effects of Temperature on Hatching, Larval Vitality and Sexual Differentiation of Golden Red Bigscale Loach <i>Paramisgurnus dabryanus</i>	MA Ben-He,	
WANG Hai-Hua, MA Ai-Jun, HUANG Zhi-Hui, LI Yan-Hua, WANG Meng-Jie, SUN Zhi-Bin (456)		
Effects of <i>Lactobacillus plantarum</i> -enriched Diet on Growth Performance, Antioxidant Ability, and Serum Biochemical Level of Epinephelus Yunlong Grouper	LI Zhong-Qin, ZOU Wen-Zheng,	
ZHANG Guang-Ming, YANG Qiu-Hua, ZHUANG Ruo-Fei, QIAO Xin-Jun, JIANG Xing-Long (465)		
Study on Structure and Function of Bacteria Community and the Couture Effect of Recirculating Aquaculture System for <i>Litopenaeus vannamei</i>	TANG Ya-Peng,	
DONG Shi-Rui, TIAN Ji-Teng, ZHOU Qian, WANG Yin-Geng, ZHANG Tian-Shi (474)		
Genome-wide Identification and Expression Analysis of the Histone Acetyltransferase(<i>HAT</i>)Gene Family in <i>Sinonovacula constricta</i> Under Environmental and Bacterial Stresses		
LIAN Jia-Ying, LYU Li-Yuan, YAO Han-Han, DONG Ying-Hui, LIN Zhi-Hua (485)		
Morphological and Genetic Diversity Analysis of <i>Octopus sinensis</i> in Nanji Islands		
.....LI Jia-Hua, CHEN Shun, CHEN Wan-Dong, XIE Shang-Wei, NI Xiao-Pin, ZHENG Xiao-Dong (495)		
Comparison on Fishing Ground Forecast Models of Thunnus Alalunga in the Tropical Waters of Atlantic Ocean		
.....SONG Li-Ming,		
REN Shi-Yu, HONG Yi-Ran, ZHANG Tian-Jiao, SUI Heng-Shou, LI Bin, ZHANG Min (504)		
Distribution Pattern of the East Asian Finless Porpoise in the Huanghe River Estuary and Its Adjacent Waters in Spring		
.....CHENG Zhao-Long, Yu Guo-Xu, LI Yong-Tao, ZUO Tao, NIU Ming-Xiang, WANG Jun (512)		

No.3

The Variation of the Relationship Between Tidal Amplitude Gradient and Upstream and Downstream Dynamic Boundary Conditions in Modaomen Estuary, Zhujiang (Pearl) River		
.....LI Bo, YANG Hao, OU Su-Ying, CAI Hua-Yang, LIU Feng, YANG Qing-Shu (527)		
Performance Evaluation of Mainstream Sea Surface Wind Field Data in Zhoushan Archipelago		
.....LIU Zi-Wei, ZHAO Shuai-Kang, WEI Xiao-Ran, BAI Ye-Fei (537)		
Investigating Changes in Atlantic Meridional Overturning Circulation from 1850 to 2014 Based on Fio-Esm V2.0 Simulations	CAO Qian, DONG Chang-Ming, XIA Chang-Shui (556)	
Response of Boundary Layer Clouds to the East China Sea Kuroshio Front Under Different Background Winds in Winter	GAO Chang, ZHANG Su-Ping, YI Li, ZHANG Yin-Yi (568)	
Effect of Hydrostatic Pressure Variation on the Electrical Characteristic of NTC Thermistors	LIU Zun-Jing,	
WANG Jun-Hua, TANG Xin-Qiang, HUO Peng, LIU Yi, YAO Jin-Cheng, CHANG Ai-Min (577)		

Topographic and Geomorphological Evolution of Huiquan Beach of Qingdao in Past 40 Years Using Massive Satellite Images.....	ZHANG Xiao-Dong, YAO Yu-Han, ZHU Long-Hai, HU Ri-Jun, WU Chuang (589)
Dissolved Methane in the Seep System at Site F in the South China Sea.....	ZHANG Yong, ZANG Wan-Ying, YANG Shu (596)
Fluorescence Characteristics of Dissolved Organic Matter in Offshore Aquaculture Water and Its Environmental Significance.....	WU Feng, SONG Xiu-Xian, CHI Lian-Bao, WANG Wen-Tao, YU Zhi-Ming (606)
Occurrence and Distribution of Microplastics in Different Habitats in Supratidal Intertidal Zone of Huanghe River Delta	SONG Jie, YI Yu-Jun, ZHOU Yang, GAO Yan-Ning (615)
Effect of Modified Clay on Paralytic Shellfish Poisoning in <i>Mizuhopecten Yessoensis</i>	MENG Xiao-Jun, SONG Xiu-Xian, ZHANG Yue, SONG Wei-Jia, ZHANG Pei-Pei, SHEN Hui-Hui, YU Zhi-Ming (624)
Effect of Neurotoxin BMAA on Growth of Microalga <i>Isochrysis Galbana</i> in Batch Cultures	LI Ai-Feng, LIU Jian-Wei, HU Yang, FU Yi-Lei, QIU Jiang-Bing (636)
Impact of Plankton Nets with Different Meshsizes on Ocean Phytoplankton Survey: Take the 34th Spring Cruise in the Southwest India Ocean as an Example	GUO Zhuo-Ran, LENG Tian-Ze, LU Dou-Ding, DAI Xin-Feng (644)
Study on Bacterial Diversity in the Xiangshan Harbor Using High Throughput Sequencing	LIU Yan, LI Zhi-En, YUAN Yi-Ming, ZHANG Zhen, QIAN Peng-Yu, YE Huan, LIU Song-Yi, WANG Ze, HAN Jiao-Jiao, ZHOU Jun, SU Xiu-Rong (653)
Effects of Overwintering on the Morphological Characteristics of <i>Trionyx sinensis</i> in Pond Culture Mode	QU Tao, SHENTU Yan, MU En-Xuan, LI You-Zhi, ZHU Wei-Dong, WANG Zhi-Zheng (663)
Auto-counting the Eel <i>Anguilla</i> in Recirculating Aquaculture System Via Deep Learning	LI Kai, JIANG Xing-Long, CHEN Er-Kang, CHEN Peng, XU Zhi-Yang, LIN Qian (674)
Olfactory Electrophysiological Responses of Hybrid Grouper (<i>Epinephelus lanceolatus</i> ♂× <i>E. fuscoguttatus</i> ♀) to 20 General Amino Acids	XU Wen-Dan, WANG Ji-Teng, HAN Tao, YAN Xiao-Jun (683)
Spatiotemporal Variations in Cluster Structure of Fish Eggs, Larvae, and Juveniles in the Sanmen Bay, Zhejiang, East China Sea	QIU Ke-Cheng, ZHANG Rong-Liang, CHAO Min, CHENG Fang-Ping, ZENG Jiang-Ning, PENG Xin, FENG Zhi-Hua, CHEN Quan-Zhen, XU Xu-Dan, HUANG Wei (694)
Molecular Cloning, Expression and Enzymatic Activity Analyses of GPx7 and GPx8 from Chinese Black Sleeper (<i>Bostrychus sinensis</i>)	DING Lang, XIA Li-Ping, SHEN Bin, ZHANG Jian-She (709)
An Analysis on Genetic Variation of Threshold Traits of Female and Male Morphotypes in <i>Macrobrachium rosenbergii</i>	WANG Jing-Wen, YANG Guo-Liang, KONG Jie, XIA Zheng-Long, SUI Juan, TANG Qiong-Ying, LUO Kun, DAI Ping, MENG Xian-Hong, CHEN Li-Mei, LUAN Sheng (717)
Effects of <i>Sinonovacula constricta</i> Polyculture on Sedimentary Environment in the Integrated Culture System of <i>Portunus trituberculatus</i> and <i>Marsupenaeus japonicus</i>	CHAI Xin-Ru, XU Wen-Jun, ZHANG Dong-Xu, HE Jie, LIU Hui-Ling (725)
Optimization of Habitat Suitability Model for <i>Portunus trituberculatus</i> in Laizhou Bay	ZHANG Xiao-Min, WANG Xiu-Xia, LI Shao-Wen, YANG Yan-Yan, XU Bing-Qing, LI Fan (734)
Comparison in Physiological, Growth, and Survival Performance of Pacific Abalone <i>Haliotis discus hannai</i> by Different Tagging Methods.....	ZHANG Yuan-Fan, TANG Jun-Wei, ZHANG Jia-Wen, GE Hong-Xing, WU Fu-Cun, ZHANG Guo-Fan (742)
Fingerprint Analysis of Volatile Flavor Compounds in Three Scallops of <i>Argopecten irradians</i> , <i>Chlamys farreri</i> and <i>Patinopecten yessoensis</i>	CUI Ming-Xian, LI Yan, FU Jing-Jing, JING Fu-Tao, CHEN Xi-Pan, ZHANG En-Shuo, LI Zan, XU Xiao-Hui, FENG Yan-Wei, SUN Guo-Hua, LI Bin, WANG Wei-Jun, YANG Jian-Min (758)
Lipid Accumulation and Contribution to Energy Accumulation of Four Tissues of <i>Dosidicus gigas</i>	FENG Yi-Xuan, SONG Wei, LIN Dong-Ming (767)
Morphological Variation Analysis of <i>Uroteuthis duvaucelii</i> in the Coastal Waters of Western Pacific	LYU Yu-Han, ZHANG Chi, DAI Liao-Yi, HE Wei-Tong, ZHENG Xiao-Dong (777)

Production-Carrying Capacity Assessment for Culture Area Planning of <i>Patinopecten Yessoensis</i> Based on Condition Index and the Maximum Total Profit	
.....	NAN Xue-Liang, WEI Hao, JIANG Zeng-Jie, ZHANG Hai-Yan, NIE Hong-Tao (788)

No.4

Foreword.....	YOU Zai-Jin, YIN Bao-Shu (789)
---------------	--------------------------------

REVIEWS

Fundamental Theory and Key Techniques of Beach Nourishment Morphodynamics: An Overview of Recent Research Advances.....	ZHENG Jin-Hai, ZHANG Chi (796)
Research Progress on Bank Erosion of Tidal Channel Under Coupled Effect of Seepage and Surface Flow	
.....	GONG Zheng, WANG Ke-Yu, ZHAO Kun, ZHANG Kai-Li (805)
Coastal Ecological Infrastructure: Research Progress and Prospect	
.....	YI Yu-Jun, LIU Qi, WANG Xue-Yuan, JI Ze-Zhou (812)
A Review on Non-Hydrostatic Water Wave Models	MA Yu-Xiang, AI Cong-Fang, DONG Guo-Hai (821)

ARTICLES

A Bem with Simple Green's Function for Wave Interaction with A 2D Body at the Surface of Infinite Water	
.....	TENG Bin, YU Mei (829)
Construction Strategies for Resilience Coastal Engineering in Harmony with Environment	JI Ze-Zhou (837)
Movement, Settlement, and Distribution of Marine Plastics in the Xiamen Bay.....	
.....	NING De-Zhi, YUAN Ze-Lin, PAN Zhong, CHEN Li-Fen, ZHANG Chong-Wei, MA Jia-Jun (849)
Experimental Study on the Effect of Marine Snow on the Settling of Microplastics in Nearshore Waters.....	
.....	ZHANG Jin-Feng, LIANG Jia-Xiong, QI Hang, ZHANG Qing-He (860)
Impacts of Typhoon Events on the Seasonal Variation of Particulate Organic Carbon in the Yellow-Bohai Sea in the Past Two Decades	
.....	WANG Xiu-Jun, WANG Xiao-Wen, YOU Zai-Jin, SHI Hong-Yuan (871)
Response to Typhoons in Coastal Waters at Jitimen in Zhujiang River Estuary	CHEN Xing-Wen,
QIU Chun-Hua, ZHANG Heng, LIU Dong, SHI Hui, MA Yong-Gui, WANG Dong-Xiao (881)	
The Tidal Effect on Storm Surge Level in Tieshan Bay, South China Sea.....	
.....	YANG Wan-Kang, FENG Xing-Ru, YIN Bao-Shu, YANG Qing-Ying (890)
The Mechanism of Suspended Sediment Transport in the Abandoned Huanghe River Delta	
.....	GUO Jin, XING Fei, YAN Yu-Ru, LI Zhan-Hai, ZHU Qing-Guang, WANG Ya-Ping (905)
Analysis of Siltation Trend and Mechanism in the Eastern Sea Area of Haikou Bay, Hainan, China	
.....	CAO Yong-Gang, BAI Yu-Chuan, CHEN Yi-Zhan, DENG Dan, OUYANG Yong-Zhong,
FENG Yan-Qing, JIANG Lin, LIAO Shi-Zhi, XIAO Zhi-Jian (916)	
Sediment Transport and Seabed Evolution Under Artificial Headland and Beach Nourishment Engineering	
.....	HAN Xue-Jian, KUANG Cui-Ping, GONG Li-Xin, LI Wen-Bin (932)
Laboratory Simulation on Sandy Beach Stability Under Storm Wave.....	
.....	WANG Jun, YOU Zai-Jin, LIANG Bing-Chen (950)
Laboratory Study on Beach Profile Evolution Under the Protection of Submerged Porous Breakwater	
.....	YI Feng, FANG Ke-Zhao, SUN Jia-Wen, WANG Ping, WU Hao, YOU Zai-Jin, LI Bin (959)
Analytical and Experimental Studies on the Reflection Characteristics of Partially Perforated Caisson Breakwater with Double Wave Chambers.....	
.....	WANG Xin-Yu, ZHAO Jing, WANG Hai-Feng, WANG Lyu-Qing, LIU Yong (970)
Assessment and Subdivision of Environmental Suitability for Submarine Engineering in the Jiaozhou Bay by Unsupervised Machine Learning	DU Xing,
SUN Yong-Fu, DONG Jie, WANG Qing, SONG Yu-Peng, SU Zhi-Ming, ZHANG Wan-Jun (980)	
Estimation of Wave Energy Flux During Ice Water Coexistence in the Bohai Sea	ZHANG Na,
WANG Li-Tao, GENG Shan-Shan, ZHANG Qing-He, YOU Zai-Jin, LI Shuai, XU Ning, XU Zhao (989)	

Joint Analysis of Wave Height and Wave Period in the Bohai Sea and Northern Yellow Sea	LI Jia-Qian, SHAO Zhu-Xiao, LIANG Bing-Chen (998)
Characteristics of Measured Waves in the North of Hangzhou Bay, East China Sea	YANG Bin, YANG Wan-Kang, XIE Hua-Wei, HUANG Sai-Hua (1006)
Characteristics of Extreme Wave Height in China's Marginal Seas Based on ERA5 Reanalysis Data	DU Wen-Yan, ZHANG Xu-Ri, ZHANG Li-Li, YOU Zai-Jin, SHI Hong-Yuan (1014)
Unified Approach for Estimation of Return Ocean Wave Height	YOU Zai-Jin (1025)

No.5

Analysis of Spreading Trajectory of Surface Ocean Materials from East of Fukushima of Japan Based on Drifting Buoy Observations	LU Xi, HU Shi-Jian, WANG Fan, HU Dun-Xin, LIU Hai-Long, DIAO Xin-Yuan, YU Ren-Cheng (1044)
Characteristics of Storm Surge in the Northern Indian Ocean and Its Response to Climate Signals	XIE Jian-Bin, WAN Wei-Qi, FENG Xing-Ru, YIN Bao-Shu, LIU Ya-Hao (1053)
Characteristics of Eddies in the Central Indian Sector of the Southern Ocean Based on Satellite Observation from 2005 to 2019	LI Deng, CHENG Ling-Qiao, YAN Chen-Bing, ZHANG Chun-Ling, HU Song (1066)
A New Algorithm of Estimation for Model Tendency Errors and the Application in ENSO Simulation	HE Qun, GAO Yan-Qiu, TANG You-Min, ZHANG Ji-Cai (1078)
Determination of Trace Metals in Porewater Samples of Marine Sediments	WANG Xiao-Jing, LIU Hong-Na, REN Yi-Jun, WU Hong-Da, ZHANG Ying, LIU Ji-Hua, LI Li (1088)
Removal Effect of Typical Red Tide Organisms with <i>Bacillus</i> and Microbial Modified Clay	ZHONG Yu-Xia, YU Zhi-Ming, LIU Shan-Shan, CAO Xi-Hua, SONG Xiu-Xian (1097)
First Report of <i>Phaeocystis Globosa</i> Bloom Caused by "Giant-Colony" Ecotype in the South Yellow Sea	ZHANG Qing-Chun, XIANG Ling, WANG Jin-Xiu, LIU Yang, SONG Min-Jie, WANG Yun-Feng, KONG Fan-Zhou, GENG Hui-Xia, YAN Tian, YU Ren-Cheng (1107)
Preliminary Study on Carcass Proportion of Crustacean Zooplankton in the South Yellow Sea in Summer	WANG Ming-Fei, ZHUANG Yun-Yun, GE Ru-Ping, CHEN Hong-Ju, LIU Guang-Xing (1120)
Dynamic Changes of Ciliates Communities in Shrimp Pond Culture and the Control with Modified Clay	LIU Zheng-Yu, YU Zhi-Ming, SONG Xiu-Xian, CAO Xi-Hua (1130)
Biotransformation of Paralytic Shellfish Toxins in Blood Clam <i>Scapharca Subcrenata</i>	LIN Zhuo-Ru, GENG Hui-Xia, TANG Wen-Jiao, YU Ren-Cheng (1142)
Preparation and Efficacy of Inactivated Vaccine Against Cyprinid Herpesvirus-2	PAN Xiao-Yi, LIN Ling-Yun, ZHU Yue, YAO Jia-Yun, YIN Wen-Lin, LIU Yi-Han, CHEN Fan, SHEN Jin-Yu (1150)
Molecular Characterization and Expression Analysis of <i>STAT6</i> in Large Yellow Croaker(<i>Larimichthys crocea</i>) After <i>Vibrio alginolyticus</i> Infection	YUAN Xiao-Qin, CHEN You, RONG Yi, MENG Yu-Fan, REN Chao-Qun, MU Yin-Nan, CHEN Xin-Hua (1160)
Differential Analysis on the Effect of Biological Phenotypes on Body Weight of <i>Carassius auratus gibelio</i> in Two Pond Aquaculture Modes	CHEN Yu, RONG Hua-Nan, LIU Zhe-Yu, CHEN Han-Chun, WANG Zhi-Zheng (1169)
Analysis and Evaluation of Nutritive Composition of Muscle of Cage Cultured <i>Bostrychus sinensis</i> in Mangroves Area	LI Yuan-Yue, LI Rong-Wei, CHEN Rong-Bin, CHEN Zheng-Qiang, LIN Pei-Ran, XIAO Zhen, WANG Qiu-Rong (1179)
Isolation and Identification of Pathogenic <i>Aeromonas veronii</i> in <i>Micropterus Salmoides</i>	LEI Ning, HAO Gui-Jie, HUANG Ai-Xia, WANG Yu-Chen, LIN Feng, SHEN Xiao-Ming, ZHU Jun-Jie (1188)
Effects of Feeding Frequency on Expression of Genes Related to Metabolism and PI3K Signaling Pathway in <i>Litopenaeus vannamei</i>	ZHAO Nan-Nan, CUI Yan-Ting, WANG Zhong-Kai, WANG Cong, ZHANG Zhi-Hao, DENG Zhi-Tong, ZHAO Rui-Yang, SUN Jin-Feng, WANG Ren-Jie, LI Yu-Quan (1196)

The Optimal Temperature and Supplemented Oxygen Amount for Live <i>Portunus trituberculatus</i> and the Metabolic Response of Its Anterior Gill	
.....ZENG Ting-Lan, CHEN Yan, MU Chang-Kao, WANG Chun-Lin, SHI Ce, YE Yang-Fang (1207)	
Histological Observation of Gonad Development During the First Sexual Maturity of <i>Macrobrachium rosenbergii</i>	
.....CHEN Guo-Zhu, ZHONG Zhen-Xiao, YANG Min-Min, XING Qian-Qian, XIA Zheng-Long, TANG Qiong-Ying, YI Shao-Kui, CAI Miu-Ying, YANG Jie, YANG Guo-Liang (1218)	
Assessment of the Maximum Sustainable Yield of <i>Portunus trituberculatus</i> in the Northern Areas of the East China Sea Under the Impact of Stock Enhancement	
.....YANG Chun-Hui, LIU Qi, WANG Ying-Bin (1224)	
Development and Application of Data Management and Analysis Platform for Echinoderm Breeding	
.....LI Bin, WANG Wei-Jun, WANG Yang-Fan, SUN Guo-Hua, XU Xiao-Hui, FENG Yan-Wei, LI Zan, CUI Cui-Ju, YANG Jian-Min (1233)	
Distribution and Environmental Dependency of Small Schools of Squid <i>Dosidicus gigas</i> and in the Equator of Eastern Pacific Ocean	
.....XUAN Wen-Dan, CUI Guo-Chen, LI Zhe, WEI Qun-Yi, TAO Ying-Xin, LIU Lian-Wei, CHEN Feng, CHEN Xin-Jun, ZHU Wen-Bin (1241)	
Behavior Preference of Juvenile <i>Tachypleus tridentatus</i> on Different Substrates	
.....YING Zi-Wei, LI Yin-Kang, XIE Xiao-Yong (1249)	
Feeding Ecology of <i>Sthenoteuthis oualaniensis</i> Based on Carbon and Nitrogen Stable Isotope Analysis in the Northwest Indian Ocean	
.....CHEN Jing, LU Hua-Jie, WANG Rui, OU Yu-Zhe, CHEN Xin-Jun (1257)	
Relationship Between Seasonal Succession of Mollusc Communities and Environmental Factors in Naozhou Island, South China Sea	
.....YAO Xin, SUN Xing-Li, ZHANG Cai-Xue, LIAO Hai-Qing, PENG Yu-Hang (1268)	
Niche and Interspecies Association of Major Epifauna in Sanmen Bay of Zhejiang Province, China	
.....MENG Zhou, WEI Yong-Jie, WANG Xiao-Bo, HAN Qing-Xi (1278)	
The CPUE Standardization of <i>Dosidicus gigas</i> in the Southeastern Pacific Ocean Using BP Neural Network	
.....LIN Hong-Yu, WANG Jin-Tao, CHEN Xin-Jun (1287)	
Factors on Ecological Efficiency of Mariculture in China	
.....ZHANG Ying, HAN Li-Min, QIN Hong (1298)	

No.6

Regulation of Mesoscale Eddies for Deep Currents in the South China Sea: A Case Study	
.....ZOU Tong, XU Qin-Bo, ZHOU Chun, ZHANG Dong-Qing (1310)	
Long-Term Trends in Subantarctic Mode Water Subduction Rates in the South Pacific and South Indian Ocean	
.....LIU Kai, GAO Shan, HOU Ying-Lin, ZHAO Jun, WANG Fan (1321)	
The Impact of Typhoon Chan-Hom on the Distribution of Suspended Particulate Matter off the Changjiang River Estuary	
.....LONG Xiao-Zhi, WANG Zhen-Yan (1337)	
Green Tide in the Yellow Sea from Generation to Extinction and the Controlling Factor	
.....WANG Sheng, ZHAO Liang, ZHANG Hai-Yan, LI Fei (1348)	
Distribution of Garbage in Shique Beach, Qingdao by Analyzing UAV-Taken Low-Altitude Images	
.....QIU Yan-Hao, ZHANG Fang (1359)	
Extraction of Representative Marine Dissolved Organic Matter by Solid Phase Extraction and Characterization in Infrared Spectrometry and Solid-State ¹³ C Nuclear Magnetic Resonance	
.....WU Yi-Xin, WANG Xiao-Cong, ZHOU Zhen-Song, HE Chen, PAN Liang-Hao, SONG Gui-Xue (1369)	
Simultaneous Determination of 27 Organophosphate Esters in Marine Sediments in High-Performance Liquid Chromatography-Tandem Mass Spectrometry	
.....SHI Ren, ZHANG Peng, CAO Sheng-Kai, XING Rong-Guang, JI Hao, GE Lin-Ke, ZHANG Cui-Rong (1384)	
Application of QRT-PCR Assay in Detection and Quantification of <i>Noctiluca scintillans</i> Gametes	
.....ZHANG Ying-Xin, SONG Shu-Qun, LI Cai-Wen (1395)	
Diversity and Distribution of Dinoflagellate Cysts in Surface Sediments in Funing Bay, Fujian, China	
.....WANG Zhao-Hui, ZHENG Hu, WANG Wen-Ting, XIE Chang-Liang, JI Shuang-Hui, ZHANG Yu-Ning (1404)	

Comparison in Seasonal Variation of Surface Picophytoplankton Abundance and Biomass in the Zhangzi Island Area and the Jiaozhou Bay LI Su-Heng, DONG Yi, ZHAO Yuan, SUN Xiao-Xia, ZHANG Guang-Tao, ZHAO Li, ZHANG Wu-Chang, XIAO Tian (1414)

Spatio-Temporal Distribution of Phytoplankton Community in Typical Coastal Waters of Qinhuangdao in 2021 MA Xin, XU Jin-Tao, YANG Wen, LI Wei-Wei, TAN Fa-Qi, WANG Zhong, LI Xin-Yang (1426)

Life Cycle of Marine Parasitic Dinoflagellate *Hematodinium perezii* and Effect of Temperature on Growth LYU Xiao-Yang, HUANG Qian, LI Meng, LIU Wei-Xin, LI Cai-Wen (1440)

Community Composition and Seasonal Variation of Planktonic Ciliates in Sanshan Island, Laizhou Bay LI Wen-Lu, XU Da-Peng, JI Dao-De (1454)

Structure and Interannual Variation of Fish Communities in the Offshore Waters of Southern Zhejiang Province in Spring WANG Yin, ZHAO Jing, GAO Chun-Xia, WANG Shi-Cong, YE Shen (1466)

Evaluation of Humoral Immune Efficacy and Protection Rate of Bivalent Cell Inactivated Vaccine Against Grass Carp Hemorrhagic Disease HAO Gui-Jie, LIN Feng, HUANG Ai-Xia, YE Ting, YAO Jia-Yun, PAN Xiao-Yi, YUAN Xue-Mei, XU Lei, HU Jin-Chun, SHEN Jin-Yu (1475)

Isolation, Biochemical Identification, and Antibiotic Sensitivity of Pathogenetic *Plesiomonas shigelloides* Isolated from Sweetfish *Plecoglossus altivelis* KAN Hong-Yu, MIAO Liang, DU Yang, LI Ming-Yun, GONG Xiao-Lin, LI Wen-Ya, SUN Zhen-Nan, SHI Hai-Rui, ZHANG Li-Ning (1486)

Evaluation on the Activity of Five Chinese Herbal Compounds in Activating Peripheral Blood Leukocytes of *Anguilla marmorata* in Vitro LI Zhong-Qin, ZHANG Xin-Yan, YANG Qiu-Hua, LIN Mao, JIANG Xing-Long, ZHAI Shao-Wei (1493)

Study on the Irreversible Starvation Point and Feeding Growth Characteristics of *Haploerythrin mucronatus* Larvae FU Tie-Zhong, PING Hong-Ling, ZHANG Tao, SHI Hui-Lai, HE Jie, LI Bin (1502)

Effect of Different Iron Levels in Feed on Growth and Hypoxia Tolerance of Turbot *Scophthalmus maximus* WANG Qing-Min, HUANG Zhi-Hui, MA Ai-Jun, SUN Zhi-Bin, WANG Xin-An, LIU Zhi-Feng, XU Rong-Jing (1512)

Construction of Efficacy Model Against Largemouth Bass Virus and Screening of Antiviral Chinese Medicine LI Qiu-Yu, HUANG Xiao-Hong, HAO Gui-Jie, HU Da-Yan, ZHANG Cheng-Sai, NIU Chen, YUAN Xue-Mei, HUANG Lei, YU Zhe, YAO Jia-Yun, YANG Gui-Lian, JIANG Jian-Hu (1522)

Ultrastructure of Spermatozoa and Effects of Environmental Factors on Spermatozoa Motility of Grouper *Epinephelus akaara* ZHU Ya-Ting, ZHANG Ming-Qing, WU Yu-Xin, ZHAO Hui-Hong, ZHANG Hai-Fa, SHU Hu (1530)

Effects of Biological Phenotypes on Body Weight in Juveniles of Sea Ruffe (*Sebastiscus marmoratus*) TENG Xian-Ya, JIANG Hong-Lei, LI You-Zhi, SI Lie-Gang, WANG Zhi-Zheng (1538)

Shell Morphology and Relative Growth Variability of Pacific Abalone *Haliotis discus hannai* in Coastal China ZHANG Jia-Wen, TANG Jun-Wei, ZHANG Yuan-Fan, WEI Min, ZHANG Guo-Fan, WU Fu-Cun (1547)

Molecular Identification and Localization of G-protein Coupled Receptor of FMRamide in Pharaoh Cuttlefish *Sepia pharaonis* GUO Zu-Ting, ZHU Yang, CAO Hui-Min, LI Shuang, ZHOU Xu, CHI Chang-Feng, MIAO Zeng-Liang (1557)

Transcriptome Analysis of Marine Nematode *Litoditis marina* in Early Developmental Stages WANG Tong-Tong, ZHANG Liu-Suo (1572)

The Ecological Carrying Capacity of *Stichopus monotuberculatus* and Ecological Effect Prediction in a Tropical Coral Reef Island Marine Ranching Area MA Wen-Gang, YIN Hong-Yang, SUN Chun-Yang, WANG Zhao-Guo, WEI Yi-Fan, FENG Bo-Xuan, FENG Jie, XU Qiang, LI Xiu-Bao, WANG Ai-Min (1584)

Composition and Main Environmental Factors of Macrobenthos Community in Sea Area of Zhoushan Islands, Zhejiang SONG Chen, XU Li-Ting, WANG Xiao-Bo, MENG Zhou, HAN Qing-Xi (1597)