

2023 年《海洋科学》总目次

第 47 卷

前言或主编致辞

前言 张 杰 5(1)

研究论文

- 珠江河口区风暴潮增水过程非线性叠加效应研究 胡仕焜, 刘丙军, 邱江潮, 曾 慧, 张明珠, 李 丹(1)1
- 闽粤交界处大埕湾海域表层沉积物分布运移特征及沉积动力环境分区
..... 林纪江, 王 平, 余世维, 栾 虹, 范哲南, 牛建伟, 郑兆勇(1)13
- 脉红螺 *Rapana venosa* 变态过程中自噬与凋亡研究 石 璞, 宋 浩, 杨美洁, 胡 志, 周 骢, 李海州, 张 涛(1)25
- 泥蚶低氧胁迫后血细胞转录组及耐低氧相关基因的筛选与分析
..... 张 阳, 金 铭, 刘宏星, 郑 贇, 詹 宇, 李凌云, 程浩翔, 包永波, 彭志兰, 张晓林(1)34
- 创伤弧菌内膜脂蛋白 MFP4 的克隆、表达及细胞定位研究 张梦琳, 马宏姝, 祝清松, 李 珂, 王文琪, 陈师勇(1)45
- 渤、黄海大沈六线鱼耳石微化学特征与群体判别
..... 王英俊, 孔 晓, 赵文溪, 于超勇, 王 馨, 唐学奎, 刘洪军, 宋爱环(1)54
- 黑潮延伸体时变正压动力过程和动能串级研究 赵裕慧, 徐永生, 黄 超, 于乐江(2)1
- 山东半岛海滩动力地貌特征分类 张丽丽, 邢 浩, 张旭日, 李华庆, 刘宗宇, 石洪源, 尤再进(2)10
- 全球经济海藻专利研发态势研究 齐 铮, 高大海, 张冬荣, 吴 昊(2)20
- 内孤立波过陆架陆坡地形的数值模拟研究 何 啸, 贾 村, 孟 静, 刘 娟, 陈 旭, 杨小欣(3)1
- 影响黄渤海的温带气旋数值集合预报试验 管沁雨, 郭敬天, 高山红(3)15
- 海州湾赤潮高发区浮游细菌与赤潮及环境因子的关系 詹皓禹, 宋敏杰, 王云峰, 颜 天(3)32
- 秦皇岛近岸海域脂溶性藻毒素污染状况与来源分析 孙洪潇, 唐文娇, 刘 超, 耿慧霞, 林卓如, 张清春, 于仁成(3)41
- 光质对条斑紫菜自由丝状体生长和生理指标的影响 田翠翠, 陆勤勤, 邓银银, 胡传明, 周 伟(3)49
- 几种物理因素对北海派琴虫体外培养方法优化的影响 王兆瑞, 杨小彤, 孙敬锋, 王江勇(3)57
- 海洋浮游甲藻中文属名的研究 马 新, 潘玉龙, 徐金涛(3)66
- 日本南部黑潮与黑潮延伸体路径状态关联性的定量分析 陈成吉, 王 强(4)1
- 基于遥感反演的浒苔绿潮暴发对有色溶解有机物与叶绿素时空分布特征的影响 苏 杭, 黄海军, 刘艳霞, 严立文(4)9
- 大黄鱼 *Lcnkl3* 基因的分子结构、表达特征及多肽片段抗菌活性 周齐家, 潘 滢, 陈 佳, 郑炜强, 王 军(4)25
- Sentinel-1 与 Sentinel-2 影像联合的黄河三角洲湿地信息提取 刘 畅, 王 岩, 王 朝, 盛 辉, 许明明, 刘善伟(5)2
- 基于生态系统服务的黄河三角洲生态风险评估研究 郭 贺, 樊彦国, 管青春, 樊博文, 王 勇(5)15
- 联合 Bi-LSTM 和注意力加强多尺度卷积的黄河三角洲湿地高光谱图像分类方法研究
..... 徐美论, 李忠伟, 王雷全, 李 娟, 胡亚斌, 梁 建(5)27
- 1982—2021 年黄、渤海表层温度变化的线性和非线性特征分析 孙艺迪, 王 德, 高志强, 高 猛, 王跃启(5)41

莱州湾夏季环流垂向结构及其影响机制的研究

- 林道荣, 吴文凡, 刘子洲, 殷冰冰, 张利, 张乃鹏, 孙超, 袁鹏杰, 翟方国(5)54
- 渤海西岸多管藻类的形态分类学研究 闫盼竹, 楚越, 丁兰平, 黄冰心, 刘美媛, 王雪聪, 秦佳男(5)66
- 基于 ADCIRC-SWAN 耦合模式的山东海洋牧场近 30 年风暴潮和海浪灾害特征分析 杜照钧, 王延平, 毛新燕(6)1
- 地磁日变改正中磁湾磁钩等磁扰对海洋磁力资料的影响 任相宇, 付永涛, 周章国(6)12
- 基于 DPSIR 模型和耦合协调度模型的胶州湾海域承载力分析 夏正启, 王凯, 彭道民, 朱玉贵, 张龙军(6)20
- 养马岛附近海域藻华期间有色溶解有机质的生物可利用性研究
- 吕孝清, 高学鲁, 赵建民, 刘永亮, 王斌, 杨波, 谢磊, 张乃星(6)30
- 藻蓝蛋白对博来霉素肺纤维化小鼠肠道菌群的影响 臧帆, 李文军, 秦松, 林剑(6)42
- 基于空谱融合与 AlexNet 算法的滨海湿地植被分类研究 许晨, 卢霞, 桑瑜, 何爽, 刘景选(7)1
- 长心卡帕藻应对海洋酸化和升温的环境适应性研究 张雅婷, 韦章良, 龙丽娟, 杨芳芳, 肖志梁(7)12
- 海水酸化和甲基汞胁迫条件下文蛤免疫应答和生物矿化响应 杨建朋, 曹亮, 董玉国, 刘金虎, 突硕增(7)22
- 香港牡蛎糖原合酶与糖原磷酸化酶基因多态性研究及糖原含量性状相关分子标记挖掘
- 贾真, 彭业韶, 孔令鑫, 秦越, 黎林杰, 梁柳, 朱鹏, 余智彩(7)35
- 养殖波纹唇鱼雌鱼形态性状对体质量的相关性及通径分析 周胜杰, 于刚, 马振华(7)44
- 规格和饥饿对刺参集群行为的影响 赖明想, 林承刚, 杨红生(8)1
- 基于小波变换和 LSTM 神经网络的格陵兰岛近海海域海平面变化预测 赵健, 刘仁强(8)7
- 饵料、温度对香螺摄食的影响 李华煜, 王元宁, 孟良, 李金泽, 董诗雨, 李永仁, 郭永军, 张涛(8)17
- 三种壳色硬壳蛤(*Mercenaria mercenaria*)的生长性状差异及通径分析
- 王元宁, 李华煜, 孟良, 李金泽, 董诗雨, 李永仁, 郭永军, 张涛(8)23
- 基于文献计量的波浪能领域研究态势分析 杨照, 吕阳, 马良(8)33
- 马努斯海盆东部裂谷岩浆演化过程——火山岩中斜长石斑晶的启示 王雄, 黄朋, 黄海军, 胡宁静(9)1
- 基于传输函数的二/三维全时空连续海洋中尺度涡旋流场实时可视化 田丰林, 王昊, 刘巍, 马颖, 陈戈(9)12
- 东寨港红树林凋落叶附生小型底栖动物的群落特征及影响因素 王娟, 宋迎春, 张烨, 李诗川, 刘小玉, 慕芳红(9)28
- SsClqDC* 基因在毛蚶免疫防御中的作用
- 彭强, 王进京, 王春德, 卢霞, 刘相全, 刘桂龙, 徐鑫, 许贺, 宁军号(9)40
- 微塑料对近江牡蛎免疫力的影响 牟红莉, 王瑞旋, 王俊, 林小植, 王江勇(9)53
- 机器学习方法在舟山渔场主要经济蟹类生物量估算中的应用 杨春蕙, 栗小东, 刘琦, 王迎宾(9)61
- 氧掺杂碳气体扩散电极用于电催化产活性氧抗菌防污研究 李建华, 王楠, 段继周, 侯保荣(10)1
- 山东半岛近岸海带养殖活动对水体光学吸收特性的影响
- 姜珊珊, 黄海军, 董玉国, 刘艳霞, 严立文, 王启飞, 李冰(10)10
- 深水井口导管管土界面摩擦退化试验研究 刘书杰, 何连, 刘正, 包兴先, 王腾(10)25
- 高分辨率风场对长江口海域波浪场模拟能力的影响研究——以台风“灿都”为例
- 李一国, 荣增瑞, 孟鑫, 姜岩, 于晓林(11)1
- 风暴潮灾害情景下海岸带暴露指数时空演变研究——以福建省东山湾为例
- 王超, 黄发明, 陈华香, 殷飞笺, 施荣灿, 杨黎静(11)12

长江口及邻近海域沉积物中四醚脂类的来源及其对底层溶解氧指示作用探究
.....王宗月, 袁华茂, 宋金明, 贺志鹏, 段丽琴, 李学刚(11)24

秋季浙闽沿岸溶解态 Cu 分布特征及其影响因素.....阮雅青, 张瑞峰(11)35

亚热带珊瑚礁海域枯水季 $p\text{CO}_2$ 的分布特征及 CO_2 汇源转换机制——以深圳杨梅坑海域为例
.....张卓, 杨波, 崔洲平, 林子燧, 谢子强, 郑惠娜, 廖宝林, 肖宝华, 朱春华(11)45

基于硬壳蛤的大菱鲆养殖尾水资源化利用研究.....胡朋朋, 宋浩, 杨美洁, 李金泽, 王雪刚, 张涛(11)57

海南万泉河口尖鳍鲤线粒体基因组测序与结构特征分析
.....蒙雨, 宋一清, 谢青颖, 蔡杏伟, 张清风, 董杨, 李芳远, 谢松光, 申志新(11)66

一个东海潮汐数值模式及检验.....刘家欣, 冯佳俊, 田清, 张渊智(12)1

基于改进的神经网络方法的风暴潮灾害经济损失预测.....赵领娣, 蔡艳玲, 王小华(12)10

天然海藻场沿岸表层沉积物有机质的分布特征与来源.....张健, 李训猛, 程晓鹏, 黄宏, 王凯, 章守宇(12)21

大菱鲆幼鱼视网膜结构及不同光谱下视蛋白基因表达特征的研究
.....刘峰, 吴乐乐, 王雨浓, 齐婷, 徐世宏, 李军, 李贤(12)30

越冬前后海马齿脂肪酸和挥发性有机物组成和变化特征
.....毕正浩, 杨芳, 潘渊博, 杨玲, 林忠州, 罗冬莲, 周成旭(12)40

复合益生菌和底质深度对硬壳蛤育苗效果的影响.....孟良, 李华煜, 王元宁, 李金泽, 李永仁, 郭永军, 张涛(12)55

中国蛤蚧 *Maetra chinensis* Philippi 稚贝运动行为学初步研究.....李金泽, 胡志, 王晓龙, 李永仁, 郭永军, 张涛(12)63

研究报告

不同盐度、饵料和光照条件培养下拟伍氏游仆虫的种群动力学响应.....吕湘琳, 齐红莉(1)66

铅在海水中的析出及其对急性毒性实验的影响.....童一帆, 韩雪萌, 蔡文倩, 田胜艳(1)73

壳寡糖延缓 db/db 小鼠自发性 II 型糖尿病发生发展的作用.....程沁园, 马明, 严琳, 吴小瑜(1)81

日本七鳃鳗转化生长因子 βI 型受体基因(*L-Tgfbri*)的克隆与表达分析
.....侯蕴轩, 李文娜, 杨晓莹, 雷丽桐, 张代云, 马畅蔚, 王浩(1)88

东方市近岸海域波浪特征分析.....王小红(2)31

乐清湾秋季虾类群落结构及生态位分析.....陈伟峰, 彭欣, 秦松, 陈骁, 陈少波, 叶深(2)47

企鹅珍珠贝非致死性 DNA 提取方法的研究.....陈一, 刘二田, 战欣, 顾志峰, 王爱民(2)55

异养蛋白核小球藻净化对虾池塘养殖尾水的实验.....宋楚儿, 孟振, 张正, 宋小金, 高淳仁(2)63

南海细菌胞外多聚物的神经保护活性筛选.....卫茂生, 王清池, 耿丽华, 岳洋, 孙超岷, 张全斌(3)79

夜光藻高效培养方法建立及其有性繁殖发生机制的初步研究
.....王君玥, 徐名扬, 张慧敏, 张珍珍, 申欣, 顾海峰, 姬南京(3)89

三种盐度对叶硝水母不同阶段生长和消化酶活性的影响.....杨翠华, 张安琪, 江玉立, 齐继光(3)97

几种褐藻多糖硫酸酯的提取、成分分析及抗氧化活性研究.....李盛楠, 王晶, 于玮洁, 卜晓翠, 单体锋(3)106

棕点石斑鱼循环水养殖系统细菌多样性分析.....吴斌(3)116

南海深海生物多样性国际研究态势与热点分析.....张灿影, 徐奎栋, 焦英毅, 张均龙, 冯志纲, 陈春(3)128

近 18 a 山东半岛南部海域海面温度的长期变化研究.....陆雪, 刘子洲, 翟方国(4)37

胶州湾海域海水浊度和悬浮物粒径分布及遥感反演模型.....	陈祥舰, 刘洪霞, 张德强, 袁圣铭, 蔺超, 庞重光(4)54
基于海洋气候数据集的区域海平面变化非线性预测.....	赵健, 蔡瑞阳, 孙伟富, 杨俊钢(4)69
顾及轮廓信息和 DRLSE 模型的遥感影像瞬时水边线快速提取.....	杨志海, 王广军, 高智雄, 冯磊, 梁四海(4)79
江苏近海海域鸟类多样性及其与风电、养殖关系分析	
.....	刘威, 张星烁, 徐海根, 杨波, 曹铭昌, 熊天石, 韩永祥, 袁屏, 伊剑锋, 周大庆(4)89
抗生素对浒苔形态及共附生细菌多样性的影响.....	包群靖, 毕芳玲, 蔡春尔, 李可俊, 何培民(4)108
低磷胁迫下翅碱蓬生长特性及脂肪酸含量的变化机制.....	刘瑀, 陆超, 焦点, 刘宇馨, 王国光(4)117
东海几种鳗鲡目鱼类 DNA 条形码研究.....	宁子君, 刘玉萍, 高天翔, 蒋日进, 杨天燕(4)126
光照周期对红鳍东方鲀雌鱼繁殖调控的初步研究	
.....	史存卓, 程学文, 刘鹰, 王秀丽, 庞洪帅, 刘奇, 田野, 熊玉宇(4)137
中西太平洋延绳钓渔业鲸类兼捕的空间变化及其环境影响.....	石一茜, 戴小杰, 朱江峰(4)145
水声定位系统中迭代适应点分层的声线修正算法.....	陈嘉兴, 赵晓旭, 董怡靖, 丁路, 刘志华(4)155
黄河三角洲生态保护和高质量发展面临的挑战及科技支撑对策建议	
.....	张杰, 杨俊芳, 李忠伟, 马毅, 任广波, 张洪亮, 王安东, 刘艳芬, 许明明, 胡亚斌, 郭防铭, 李晓敏(5)79
基于光谱-空间联合 Transformer 模型的黄河三角洲湿地高光谱影像分类	
.....	辛紫麒, 李忠伟, 王雷全, 许明明, 胡亚斌, 梁建(5)90
基于多时相 Sentinel-2 影像多特征优选的湿地信息提取.....	盛辉, 韦靖靖, 胡耀东, 许明明, 崔建勇, 郑红霞(5)102
基于沉积物 eDNA 评估三疣梭子蟹资源量的方法初探	
.....	张凡瑶, 张再美, 陈萌琦, 韦东升, 徐严欢, 姚冰, 孙振宁, 李慧, 杨艳艳, 周兴, 李凡, 陈翠霞(5)113
基于双路图卷积的黄河三角洲湿地地物分类研究	
.....	郭防铭, 李忠伟, 孟乔, 王雷全, 张杰, 胡亚斌, 梁建(5)121
基于点云与影像融合的黄河三角洲互花米草提取方法.....	曹裕超, 王健, 邵为真, 孙文潇, 曾静静(5)131
DCM 模拟中基于 OPSA 方法的参数敏感性分析.....	高永丽, 王际朝, 孙国栋, 张坤, 姜向阳, 王宁(5)139
黄河口邻近海域海冰变化特征及机制分析.....	胡世强, 黎舸, 邓曜成, 刘娟, 苏亮, 于华明(5)149
北方典型海岛高质量发展策略与途径——以长岛为例	
.....	袁秀堂, 王清, 于正林, 邹涛, 刘辉, 逢浩辰, 王德, 肖扬, 宋祖德, 唐君玮, 贺强, 杨红生(6)52
水位深度对工厂化流水养殖大菱鲆生长的影响.....	李纪元, 郭腾, 徐世宏, 吴乐乐, 于佳辰, 王彦丰, 李军(6)60
条斑紫菜栽培过程中有害藻类的分离与鉴定	
.....	杜艺菲, 王广策, 牛建峰, 冯泽中, 王旭雷, 卓锦涛, 邵之卓, 邰丽, 宫相忠(6)70
养殖迁移对菲律宾蛤仔挥发性有机物质组成变化的影响.....	杨玲, 郭贺, 许智慧, 邵倩文, 冉照收, 周成旭(6)79
短小拟五角蟹的分布新记录.....	宁璇璇, 韩庆喜(6)91
一株可诱导海带配子体产生白化病的细菌的分离与鉴定	
.....	韩宜晓, 任艺飞, 庄英瑞, 陈尧, 钟秋连, 邱其樱, 陈德福, 王高歌(7)53
南黄海潮间带海洋线虫多样性及中国海 4 个新纪录种记述.....	武青华, 郝映东, 褚梦迪, 孙静(7)65
三亚蜈支洲岛毗邻海域鱼类物种多样性及群落结构特征.....	罗惠桂, 汪佳仪, 谢珍玉, 李建龙, 章翔(7)74
基于简单台风模型的台风“海马”强度变化机制研究.....	杨倩, 何海伦(7)87

夏季庙岛群岛大型底栖动物群落特征	张悦, 于国旭, 徐勇, 李新正, 王金宝, 隋吉星(7)96
辽河口潮间带大型底栖动物摄食功能群特征研究	孟翔, 袁秀堂, 张安国, 齐玥, 吴楠, 袁蕾, 康婧, 宋钢(7)111
大珠母贝精子短期保藏条件的初步筛选	黄星美, 赵旺, 邓正华, 温为庚, 陈明强, 王雨, 张钰伟, 于刚(7)122
哈维氏弧菌对泥蚶的毒性及半致死浓度研究	杨千元, 李敏, 胡高宇, 陈然, 肖国强, 滕爽爽(7)130
三沙湾大肠杆菌和肠球菌抗生素耐药性分析	李向乾, 李晓东, 林永豪, 张伟, 徐晗, 杨桂琴, 路玮静, 俞道进, 陈新华(7)138
黄海自由生活线虫两个新纪录种描述	吕艳伟, 王梦娜, 梁慧鑫, 王春明(7)149
氨氮急性胁迫对许氏平鲷血液生化指标影响	高云涛, 高云红, 王嘉伟, 李明月, 曲江波, 贾玉东, 孟振(8)49
海洋污损生物藤壶生长过程及附着强度研究	李友炽, 王贵, 吴敬权, 邓培昌, 张福泉, 黄俊毅(8)60
基于北斗短报文的海洋观测实时通信系统的设计与研发	姜斌, 徐振华, 葛振营, 杨树国, 陈永华(8)68
LED光谱对许氏平鲷视网膜形态的影响	吴燕玲, 孙飞, 蔡皓玮, 李鑫, 刘鹰, 刘松涛, 马贺(9)71
中国海洋渔业碳平衡状态及影响因素研究	田昊东, 孙圣杰, 李伟波, 乔之怡(9)81
盐度胁迫下凡纳滨对虾体内虾青素在着色与抗氧化的资源权衡	杨梦焯, 王宝杰, 刘梅, 蒋克勇, 仲晨, 王雷(10)32
山东沿海不同工业废水源中微塑料的赋存特征	李晓亚, 刘娟, 郑珊, 梁俊华, 朱明亮, 李庆洁, 孙晓霞(10)43
渤海湾南部滩涂贝类群落结构特征及其环境因子相关性研究	蒋文良, 陈胜林, 李永明, 张德普, 刘栋, 李敏, 高梦娟, 吕振波, 任中华(10)52
模糊层次分析法在浅剖数据质量评价中的应用	孔敏, 王风帆, 耿姗姗, 余佳, 舒雨婷(10)65
基于相位差测深声呐(PDBS)技术的莱州湾人工鱼礁探测	刘玉斌, 张建兴, 宋永东, 张毅涵, 栾振东(10)76
两种不同海洋生物材料对大鼠急性创面修复效果的研究	王蕾, 吕康宁, 李文军, 王凯, 姜晓锐, 秦松(10)87
光谱对许氏平消化代谢节律及生理应激研究	房莹莹, 陈璐璐, 刘松涛, 孙飞, 吴燕玲, 李鑫, 刘鹰, 马贺(10)94
星康吉鳗精子的超微结构研究	史宝, 王成刚, 汤晓华, 赵新宇, 晏科文, 马晓东(10)112
基于无人机光学图像的海流观测方法研究	杨静, 陈忠彪, 何宜军, 孙闰霞(11)79
黄东海间遗传连通性多物种案例分析与启示	赵峰, 王子涵, 曹玲, 曾聪(11)97
海洋聚球藻对不同硝酸盐浓度的响应特征	石凤, 周玉婷, 李佳霖, 高会旺, 秦松(11)110
科研鱼探仪数据的解编及地球物理应用	车昊函, 邢磊, 蔺玉璽(11)121
中国辽宁-浙江沿海地区川蔓草分布现状、生态特征及其主要威胁	顾瑞婷, 徐少春, 岳世栋, 许帅, 张玉, 张晓梅, 周毅(12)69
小竹山岛人工鱼礁区大型底栖动物群落结构的初步研究	孙雪婷, 于浩林, 唐衍力, 于梦杰, 赵伟, 盛化香(12)80
螺旋藻藻蓝蛋白对酒精性肝损伤大鼠肠道菌群的影响	王静, 臧帆, 秦松(12)93

研究综述

近 20 年中国近海和海岸带大气黑碳干湿沉降及源解析	冯辰龙, 邢建伟, 袁华茂, 宋金明, 李学刚, 马骏(2)71
----------------------------------	----------------------------------

海水和海洋沉积物中有机磷酸酯的研究进展	梁桂珠, 张玉凤, 刘 鹰, 程学文, 张 韬, 刘志强, 杨 萌, 江 盈, 刘佳琪(2)86
鱼类 spexin 系统鉴定及其生理功能研究	田振方, 王 滨, 崔爱君, 徐永江, 柳学周, 姜 燕, 田云臣(2)100
基于 CiteSpace 的海洋热浪研究可视化分析	陈俏君, 李德磊, 冯建龙(2)109
科考型有缆遥控潜水器选型研究	周 欣, 刘文博, 王凤军, 郑家恒, 孙 杨, 赵国兴, 吴永亭(2)125
利玛原甲藻产毒差异及影响因素研究进展	张昊宇, 吴海燕, 董晨帆, 郑关超, 郭萌萌, 谭志军(3)137
除草剂对海藻的影响研究进展	刘明杰, 高亚平, 张 玉, 岳世栋, 周 毅(4)165
海洋纳米塑料污染现状及其对双壳类的生态毒理效应	杨 灿, 徐文喆, 孙 军(4)176
黄河三角洲湿地高光谱遥感研究进展	李忠伟, 郭防铭, 任广波, 马 毅, 辛紫麒, 黄文昊, 隋 昊, 孟 乔(5)161
水体透明度遥感反演算法研究进展	赵春燕, 禹定峰, 周 燕, 杨 雷, 高 嵩, 姚慧平(5)176
微生物治理有害藻华研究进展	刘姗姗, 俞志明, 曹西华, 宋秀贤(6)96
海洋沉积物中铁保护的有机碳埋藏研究进展	林德菊, 王 楠, 李浩帅, 张海洋, 包 锐(6)108
水产动物中的微塑料及其对人健康的潜在危险性	王 娜, 张士瑾(6)124
滨海地下水含水层中微塑料运移机制及环境效应研究综述	邹寅俏, 陈广泉, 于洪军, 宋 凡, 王延诚, 赵文卿(6)130
我国微藻产业标准化现状及展望	周浩媛, 刘 翔, 高政权, 孟春晓, 李 斌, 向文洲(6)144
中国近海营养盐结构失衡与磷消耗问题及其生态环境效应的研究进展	冉祥滨, 韦钦胜, 于志刚(8)75
环境 RNA 技术在水生生态系统生物多样性监测中的应用	李文琼, 代书勤, 张 辉, 钱薇薇(8)90
CRISPR/Cas9 基因编辑系统及其在微藻中的应用	刘丽娟, 郭 粟, 杨官品(8)101
中国栉孔扇贝养殖和育种的回顾与展望	于道德, 刘凯凯, 张少春, 邱兆星(8)112
海水悬浮物浓度原位测量技术进展	陈永国, 张 涛, 刘之葵, 陈永华, 邹宝平, 叶 良(8)120
海洋浮游植物初级生产力及碳生物量的检测技术研究进展	王庆轩, 崔正国, 曲克明, 王庆奎, 魏玉秋, 孙 军(8)131
贝壳土壤改良剂的应用研究进展	刘卫翔, 秦玉坤, 范兆乾, 张海波, 王中玮, 李鹏程(8)141
联合国“海洋十年”规划实施之初动态与展望	王 琳, 李 晶, 周 慧, 王 凡(9)91
海洋环境中氟喹诺酮类抗生素(FQs)分析的样品前处理与检测技术	温丽联, 宋金明, 李学刚, 马 骏, 戴佳佳, 袁华茂, 段丽琴, 王启栋(9)103
近海海洋酸化对痕量元素在沉积物-海水界面处生物地球化学特性的影响研究	高文婧, 曲宝晓, 袁华茂, 宋金明(9)119
滨海核电冷源取水区风险生物的分类及特征分析	沈萍萍, 于先波, 孟不凡, 武存超(9)131
软骨鱼类输卵管腺研究进展	高 广, 肖志忠, 马文辉, 潘 钊, 李 军(9)141
甲壳素提取方法的研究进展	周 忆, 邢荣娥, 杨皓月, 刘 松, 李鹏程(11)32

Marine Sciences Volume 47, 2023 Contents

PREFACE

PrefaceZHANG Jie (5)1

ARTICLES

Nonlinear effects of a storm surge in the Pearl River estuary

..... HU Shi-kun, LIU Bing-jun, QIU Jiang-chao, ZENG Hui, ZHANG Ming-zhu, LI Dan (1)12

Distribution and migration characteristics of surficial settlements and division of dynamic sedimentary environment in

Dacheng Bay between Fujian and Guangdong LIN Ji-jiang, WANG Ping, YU Shi-wei,

LUAN Hong, FAN Zhe-nan, NIU Jian-wei, ZHENG Zhao-yong (1)24

Autophagy and apoptosis during metamorphosis in *Rapana venosa*

..... SHI Pu, SONG Hao, YANG Mei-jie, HU Zhi, ZHOU Cong, LI Hai-zhou, ZHANG Tao (1)33

Blood cell transcriptome and screening, analysis of genes related to hypoxia tolerance of *Tegillarca granosa*ZHANG Yang,

JIN Ming, LIU Hong-xing, ZHENG Yun, ZHAN Yu, LI Ling-yun, CHENG Hao-xiang,

BAO Yong-bo, PENG Zhi-lan, ZHANG Xiao-lin (1)44

Cloning, expression, and cellular localization of lipoprotein MFP4 in *Vibrio vulnificus*

..... ZHANG Meng-lin, MA Hong-shu, ZHU Qing-song, LI Ke, WANG Wen-qi, CHEN Shi-yong (1)53

Microchemical characteristics of otoliths and stock discrimination of *Hexagrammos otakii* from the Bohai and Yellow Seas

.....WANG Ying-jun, KONG Xiao, ZHAO Wen-xi, YU Chao-yong,

WANG Xin, TANG Xue-xi, LIU Hong-jun, SONG Ai-huan (1)65

Investigating the time-varying barotropic dynamic process and kinetic cascade of the Kuroshio extension

.....ZHAO Yu-hui, XU Yong-sheng, HUANG Chao, YU Le-jiang (2)9

Classification of beach dynamic geomorphic features in the Shandong Peninsula

..... ZHANG Li-li, XING Hao, ZHANG Xu-ri, LI Hua-qing, LIU Zong-yu, SHI Hong-yuan, YOU Zai-jin (2)19

Global patent analysis of economic seaweed QI Zheng, GAO Da-hai, ZHANG Dong-rong, WU Hao (2)30

Numerical investigation of the evolution of internal solitary waves over shelf-slope topography

..... HE Xiao, JIA Cun, MENG Jing, LIU Juan, CHEN Xu, YANG Xiao-xin (3)14

Numerical ensemble forecasting experiments on extratropical cyclones affecting the Yellow and Bohai Seas

..... GUAN Qin-yu, GUO Jing-tian, GAO Shan-hong (3)31

Relationship between bacterioplankton and the red tide and environmental factors in frequent harmful algal bloom

areas in Haizhou BayZHAN Hao-yu, SONG Min-jie, WANG Yun-feng, YAN Tian (3)40

Contamination status and origins of lipophilic marine toxins in Qinhuangdao coastal waters

..... SUN Hong-xiao, TANG Wen-jiao, LIU Chao, GENG Hui-xia, LIN Zhuo-ru, ZHANG Qing-chun, YU Ren-cheng (3)48

Effects of different light qualities on growth and physiological characteristics of *Neopyropia yezoensis* free-living conchocelids

..... TIAN Cui-cui, LU Qin-qin, DENG Yin-yin, HU Chuan-ming, ZHOU Wei (3)56

Effect of physical factors on optimizing *in vitro* culture of *Perkinsus beihaiensis*

..... WANG Zhao-rui, YANG Xiao-tong, SUN Jing-feng, WANG Jiang-yong (3)65

Analyzing Chinese genus names of marine planktonic dinoflagellates MA Xin, PAN Yu-long, XU Jin-tao (3)78

Quantitative analysis of the relationship between the path states of the Kuroshio south of Japan and the Kuroshio Extension

.....CHEN Cheng-ji, WANG Qiang (4)8

Effects of <i>Enteromorpha prolifera</i> blooms on the spatial and temporal distributions of CDOM and chlorophyll by remote sensing	SU Hang, HUANG Hai-jun, LIU Yan-xia, YAN Li-wen (4)24
Molecular structure, expression characteristics, and antibacterial activity of polypeptide fragment of <i>Lcnk13</i> in large yellow croaker.....	ZHOU Qi-jia, PAN Ying, CHEN Jia, ZHENG Wei-qiang, WANG Jun (4)36
Extraction of wetland information from Sentinel-1 and Sentinel-2 images in the Yellow River Delta	LIU Chang, WANG Yan, WANG Zhao, SHENG Hui, XU Ming-ming, LIU Shan-wei (5)14
Ecological risk assessment of the Yellow River Delta based on ecosystem services	GUO He, FAN Yan-guo, GUAN Qing-chun, FAN Bo-wen, WANG Yong (5)26
Combined Bi-LSTM and attention enhancement multiscale convolution for wetland hyperspectral image classification in the Yellow River Delta	XU Mei-lun, LI Zhong-wei, WANG Lei-quan, LI Juan, HU Ya-bin, LIANG Jian (5)40
Linear and nonlinear trend analyses of sea surface temperature in the Bohai and Yellow Seas of China during 1982-2021	SUN Yi-di, WANG De, GAO Zhi-qiang, GAO Meng, WANG Yue-qi (5)53
Vertical structure of summer circulation in Laizhou Bay and its influencing mechanism	LIN Dao-rong, WU Wen-fan, LIU Zi-zhou, YIN Bing-bing, ZHANG Li, ZHANG Nai-peng, SUN Chao, YUAN Peng-jie, ZHAI Fang-guo (5)65
Study on the morphological taxonomy of <i>Polysiphonia</i> complex from the west coast of the Bohai Sea	YAN Pan-zhu, CHU Yue, DING Lan-ping, HUANG Bing-xin, LIU Mei-yuan, WANG Xue-cong, QIN Jia-nan (5)78
Hazard analysis of storm surges for marine ranchings in the Shandong Peninsula in the past three decades	DU Zhao-jun, WANG Yan-ping, MAO Xin-yan (6)11
The influence of magnetic crochet and magnetic bay on the ocean magnetic data	REN Xiang-yu, FU Yong-tao, ZHOU Zhang-guo (6)19
Analysis of marine region carrying capacity in Jiaozhou Bay based on the DPSIR model and coupling coordination degree model.....	XIA Zheng-qi, WANG Kai, PENG Dao-min, ZHU Yu-gui, ZHANG Long-jun (6)29
Bioavailability of chromophoric dissolved organic matter in the coastal waters adjacent to Yangma Island during an algal bloom	LV Xiao-qing, GAO Xue-lu, ZHAO Jian-min, LIU Yong-liang, WANG Bin, YANG Bo, XIE Lei, ZHANG Nai-xing (6)41
Effect of phycocyanin on the intestinal flora of mice with bleomycin-induced pulmonary fibrosis	ZANG Fan, LI Wen-jun, QIN Song, LIN Jian (6)51
Vegetation classification combining spatial-spectral feature fusion based on remote sensing and AlexNet algorithm in a coastal wetland.....	XU Chen, LU Xia, SANG Yu, HE Shuang, LIU Jing-xuan (7)11
Environmental adaptability of the red seaweed <i>Kappaphycus alvarezii</i> in response to ocean acidification and warming	ZHANG Ya-ting, WEI Zhang-liang, LONG Li-juan, YANG Fang-fang, XIAO Zhi-liang (7)21
Immune response and biomineralization in the gills and visceral mass of the clam, <i>Meretrix petechialis</i> , to methylmercury toxicity under ocean acidification conditions.....	YANG Jian-peng, CAO Liang, DONG Yu-guo, LIU Jin-hu, DOU Shuo-zeng (7)34
Polymorphisms of glycogen synthase and glycogen phosphorylase genes and identification of glycogen content-associated molecular markers in <i>Crassostrea hongkongensis</i>	JIA Zhen, PENG Ye-shao, KONG Ling-xin, QIN Yue, LI Lin-jie, LIANG Liu, ZHU Peng, SHE Zhi-cai (7)43
Path analysis of female parents of <i>Cheilinus undulates</i>	ZHOU Sheng-jie, YU Gang, MA Zhen-hua (7)52
Effects of size and starvation on the aggregating behavior of sea cucumber <i>Apostichopus japonicus</i>	LAI Ming-xiang, LIN Cheng-gang, YANG Hong-sheng(8)6
Prediction of sea level change based on wavelet transform and LSTM neural network near Greenland	ZHAO Jian, LIU Ren-qiang(8)16
Effects of feeding preferences and temperature on <i>Neptunea arthritica cumingii</i>	LI Hua-yu, WANG Yuan-ning, MENG Liang, LI Jin-ze, DONG Shi-yu, LI Yong-ren, GUO Yong-jun, ZHANG Tao(8)22

Differences in the growth traits and path analysis of the three shell colors of <i>Mercenaria mercenaria</i>	
..... WANG Yuan-ning, LI Hua-yu, MENG Liang, LI Jin-ze, DONG Shi-yu, LI Yong-ren, GUO Yong-jun, ZHANG Tao(8)32	
Analysis of the research situation of the wave energy field based on bibliometrics..... YANG Zhao, Lǚ Yang, MA Liang(8)48	
Magma evolution process in the East Rift, Manus Basin: evidence from plagioclase phenocrysts in lavas	
..... WANG Xiong, HUANG Peng, HUANG Hai-jun, HU Ning-jing(9)11	
Real-time visualization of 2D/3D full spatiotemporal continuous ocean mesoscale eddy fields based on the transfer function	
..... TIAN Feng-lin, WANG Hao, LIU Wei, MA Ying, CHEN Ge(9)27	
Community characteristics and factors affecting meiofauna on mangrove leaf litter from Dongzhai Harbor	
.....WANG Juan, SONG Ying-chun, ZHANG Ye, LI Shi-chuan, LIU Xiao-yu, MU Fang-hong(9)39	
A novel C1q domain-containing gene (<i>SsClqDC</i>) from <i>Scapharca subcrenata</i> participates in the immune defense against pathogen infection..... PENG Qiang, WANG Jin-jing, WANG Chun-de, LU Xia, LIU Xiang-quan, LIU Gui-long, XU Xin, XU He, NING Jun-zao(9)52	
Effect of polystyrene microplastics on oyster immunity	
..... MOU Hong-li, WANG Rui-xuan, WANG Jun, LIN Xiao-zhi, WANG Jiang-yong(9)60	
Application of machine learning methods for estimating the biomass of economically important crabs in the Zhoushan fishery	
..... YANG Chun-hui, LI Xiao-dong, LIU Qi, WANG Ying-bin(9)70	
Electrocatalytic production of reactive oxygen species with oxygen-doped carbon-based gas diffusion electrode for antibacterial antifouling..... LI Jian-hua, WANG Nan, DUAN Ji-zhou, HOU Bao-rong(10)9	
Effects of coastal kelp farming on the absorption characteristics of water in the Shandong Peninsula	
.....JIANG Shan-shan, HUANG Hai-jun, DONG Yu-guo, LIU Yan-xia, YAN Li-wen, WANG Qi-fei, LI Bing(10)24	
Experimental study on soil-conductor interface friction degradation of wellhead in deepwater	
..... LIU Shu-jie, HE Lian, LIU Zheng, BAO Xing-xian, WANG Teng(10)31	
Influence of high-resolution winds on the simulation of surface waves over the Changjiang River Estuary: A case study of Typhoon Chanthu	
LI Yi-guo, RONG Zeng-rui, MENG Xin, JIANG Yan, YU Xiao-lin(11)11	
Spatiotemporal evolution of the exposure index in coastal zones from the context of storm surge disaster: Dongshan Bay, Fujian Province	
WANG Chao, HUANG Fa-ming, CHEN Hua-xiang, YIN Fei-jian, SHI Rong-can, YANG Li-jing(11)23	
Source of tetraether lipids in sediments of the Changjiang River Estuary and adjacent sea: Indication of bottom water dissolved oxygen..... WANG Zong-yue, YUAN Hua-mao, SONG Jin-ming, HE Zhi-peng, DUAN Li-qin, LI Xue-gang(11)34	
Distributions and controlling factors of dissolved Copper in the Zhe-Min coastal region in autumn	
.....RUAN Ya-qing, ZHANG Rui-feng(11)44	
Distribution characteristics of $p\text{CO}_2$ and source-sink conversion mechanism of CO_2 in a subtropical coral reef water during the dry season: A case study of the Yangmeikeng Sea area in Shenzhen, China..... ZHANG Zhuo, YANG Bo, CUI Zhou-ping, LIN Zi-yi, XIE Zi-qiang, ZHENG Hui-na, LIAO Bao-lin, XIAO Bao-hua, ZHU Chun-hua(11)56	
Water utilization efficiency of the <i>Scophthalmus maximus</i> tail based on <i>Mercenaria mercenaria</i>	
..... HU Peng-peng, SONG Hao, YANG Mei-jie, LI Jin-ze, WANG Xue-gang, ZHANG Tao(11)65	
Mitochondrial genome sequencing and structural characteristic analysis of <i>Cyprinus acutidorsalis</i> from Wanquan Estuary, Hainan..... MENG Yu, SONG Yi-qing, XIE Qing-ying, CAI Xing-wei, ZHANG Qing-feng, DONG Yang, LI Fang-yuan, XIE Song-guang, SHEN Zhi-xin(11)78	
Verification of a tidal model for the East China Sea..... LIU Jia-xin, FENG Jia-jun, TIAN Qing, ZHANG Yuan-zhi(12)9	
Improved neural network-based economic loss prediction of storm surge disaster	
.....ZHAO Ling-di, QI Yan-ling, WANG Xiao-hua(12)20	
Distribution characteristics and sources of organic matter in surface sediments along the coast of natural seaweed bed	

.....ZHANG Jian, LI Xun-meng, CHENG Xiao-peng, HUANG Hong, WANG Kai, ZHANG Shou-yu(12)29
Development of retinal structures and opsin gene expression under different spectra in juvenile turbot

..... LIU Feng, WU Le-le, WANG Yu-nong, QI Ting, XU Shi-hong, LI Jun, LI Xian(12)39
Composition and changes in fatty acids and volatile organic compounds in *Sesuvium portulacastrum* during overwintering

..... BI Zheng-hao, YANG Fang, PAN Yuan-bo, YANG Ling, LIN Zhong-zhou, LUO Dong-lian, ZHOU Cheng-xu(12)54
Effect of compound probiotics and substrate depth on the breeding of hard clam (*Mercenaria mercenaria*)

..... MENG Liang, LI Hua-yu, WANG Yuan-ning, LI Jin-ze, LI Yong-ren, GUO Yong-jun, ZHANG Tao(12)62
Preliminary study on the behavior of *Macra chinensis* Philippi

..... LI Jin-ze, HU Zhi, WANG Xiao-long, LI Yong-ren, GUO Yong-jun, ZHANG Tao(12)68

REPORTS

Effects of salinity, food, and light conditions on the population dynamics of *Euplotes parawoodruffi*
..... LV Xiang-lin, QI Hong-li (1)72

Precipitation of Pb in seawater and its impact on acute toxicity test
..... TONG Yi-fan, HAN Xue-meng, CAI Wen-qian, TIAN Sheng-yan (1)80

Chitooligosaccharides delay the course of type II diabetes mellitus in db/db mice
..... CHENG Qin-yuan, MA Ming, YAN Lin, WU Xiao-yu (1)87

Cloning and expression analysis of transforming growth factor β type I receptor gene (*L-Tgfb1*) of *Lampetra japonica*
..... HOU Yun-xuan, LI Wen-na, YANG Xiao-xuan, LEI Li-tong, ZHANG Dai-yun, MA Chang-wei, WANG Hao (1)98

Analysis of wave characteristics in the offshore area of Dongfang City..... WANG Xiao-hong (2)46

Community structure and ecological niche analysis of shrimp during autumn in Yueqing Bay
..... CHEN Wei-feng, PENG Xin, QIN Song, CHEN Xiao, CHEN Shao-bo, YE Shen (2)54

Nonlethal DNA extraction methods for *Pteria penguin*... CHEN Yi, LIU Er-tian, ZHAN Xin, GU Zhi-feng, WANG Ai-min (2)62

Experiment on purification of tail water of shrimp pond culture with heterotrophic cultivated *Chlorella pyrenoidosa*
..... SONG Chu-er, MENG Zhen, ZHANG Zheng, SONG Xiao-jin, GAO Chun-ren (2)70

Screening of bacterial extracellular polymeric substances with neuroprotective activity from the South China Sea
..... WEI Mao-sheng, WANG Qing-chi, GENG Li-hua, YUE Yang, SUN Chao-min, ZHANG Quan-bin (3)88

Establishment of a high-efficiency culture method for *Noctiluca scintillans* and a preliminary study of its sexual reproduction mechanism
..... WANG Jun-yue, XU Ming-yang, ZHANG Hui-min, ZHANG Zhen-zhen, SHEN Xin, GU Hai-feng, JI Nan-jing (3)96

Effects of three levels of salinities on the growth and digestive enzyme activities of *Phyllorhiza chinensis* at different stages
..... YANG Cui-hua, ZHANG An-qi, JIANG Yu-li, QI Ji-guang (3)105

Extraction, composition analysis, and antioxidant activity of polysaccharides from three species of seaweed
..... LI Sheng-nan, WANG Jing, YU Wei-jie, BU Xiao-cui, SHAN Ti-feng (3)115

Bacterial diversity analysis of recirculating aquaculture *Epinephelus fuscoguttatus* WU Bin (3)127

Analysis of international trends and hotspots in research on deep-sea biodiversity in the South China Sea
..... ZHANG Can-ying, XU Kui-dong, JIAO Ying-yi, ZHANG Jun-long, FENG Zhi-gang, CHEN Chun (3)136

Long-term changes in sea surface temperature in sea areas to the south of the Shandong Peninsula over the past 18 years
..... LU Xue, LIU Zi-zhou, ZHAI Fang-guo (4)53

Remote sensing inversion model of seawater turbidity and suspended particle size based on multispectral data
..... CHEN Xiang-jian, LIU Hong-xia, ZHANG De-qiang, YUAN Sheng-ming, LIN Chao, PANG Chong-guang (4)68

Prediction of regional sea-level nonlinear change based on ocean climate data records
..... ZHAO Jian, CAI Rui-yang, SUN Wei-fu, YANG Jun-gang (4)78

Fast extraction of instantaneous waterline from remote sensing based on contour information and DRLSE model	YANG Zhi-hai, WANG Guang-jun, GAO Zhi-xiong, FENG Lei, LIANG Si-hai (4)88
Bird diversity in Jiangsu offshore waters: its analysis and relationship with wind farms and mariculture	LIU Wei, ZHANG Xing-shuo, XU Hai-gen, YANG Bo, CAO Ming-chang, XIONG Tian-shi, HAN Yong-xiang, YUAN Ping, YI Jian-feng, ZHOU Da-qing (4)107
Effects of antibiotics on the morphology and associated bacterial diversity of <i>Ulva prolifera</i>	BAO Qun-jing, BI Fang-ling, CAI Chun-er, LI Ke-jun, HE Pei-min (4)116
Effects of low phosphorus conditions on the growth characteristics and fatty acid content of <i>Suaeda heteroptera Kitagawa</i>	LIU Yu, LU Chao, JIAO Dian, LIU Yu-xin, WANG Guo-guang (4)125
DNA barcoding analysis of some Anguilliformes fishes in the East China Sea	NING Zi-jun, LIU Yu-ping, GAO Tian-xiang, JIANG Ri-jin, YANG Tian-yan (4)136
Preliminary study on photoperiod regulation of reproduction in female tiger puffer <i>Takifugu rubripes</i>	SHI Cun-zhuo, CHENG Xue-wen, LIU Ying, WANG Xiu-li, PANG Hong-shuai, LIU Qi, TIAN Ye, XIONG Yu-yu (4)144
Spatial variation and environmental effects of concurrent whaling in longline fisheries in the Central and Western Pacific	SHI Yi-qian, DAI Xiao-jie, ZHU Jiang-feng (4)154
Iterative adaptive points layering algorithm for sound ray correction in an underwater acoustic localization system	CHEN Jia-xing, ZHAO Xiao-xu, DONG Yi-jing, DING Lu, LIU Zhi-hua (4)164
Challenges to the ecological conservation and high-quality development of the Yellow River Delta and countermeasures for scientific and technological support	ZHANG Jie, YANG Jun-fang, LI Zhong-wei, MA Yi, REN Guang-bo, ZHANG Hong-liang, WANG An-dong, LIU Yan-fen, XU Ming-ming, HU Ya-bin, GUO Fang-ming, LI Xiao-min (5)89
Hyperspectral image classification of Yellow River Delta wetlands based on a spectral-spatial unified transformer model	XIN Zi-qi, LI Zhong-wei, WANG Lei-quan, XU Ming-ming, HU Ya-bin, LIANG Jian (5)101
Wetland information extraction based on multifeature optimization of multitemporal Sentinel-2 images	SHENG Hui, WEI Jing-jing, HU Yao-dong, XU Ming-ming, CUI Jian-yong, ZHENG Hong-xia (5)112
A preliminary method to assess the <i>Portunus trituberculatus</i> resource based on sedimentary eDNA	ZHANG Fan-yao, ZHANG Zai-mei, CHEN Meng-qi, WEI Dong-sheng, XU Yan-huan, YAO Bing, SUN Zhen-ning, LI Hui, YANG Yan-yan, ZHOU Xing, LI Fan, CHEN Cui-xia (5)120
Yellow River Delta wetland classification based on a dual graph convolution network	GUO Fang-ming, LI Zhong-wei, MENG Qiao, WANG Lei-quan, ZHANG Jie, HU Ya-bin, LIANG Jian (5)130
Extraction method of <i>Spartina alterniflora</i> in the Yellow River Delta based on point cloud and image fusion	CAO Yu-chao, WANG Jian, SHAO Wei-zhen, SUN Wen-xiao, ZENG Jing-jing (5)138
Parameter sensitivity analysis of a biological ocean model based on OPSA method	GAO Yong-li, WANG Ji-chao, SUN Guo-dong, ZHANG Kun, JIANG Xiang-yang, WANG Ning (5)149
Analysis of the variations and mechanisms of sea ice change in the sea area near the Yellow River Estuary	HU Shi-qiang, LI Ge, DENG Yao-cheng, LIU Juan, SU Liang, YU Hua-ming (5)160
High-quality development strategies and approaches of China's northern islands: case study in Changdao	YUAN Xiu-tang, WANG Qing, YU Zheng-lin, ZOU Tao, LIU Hui, PANG Hao-chen, WANG De, XIAO Yang, SONG Zu-de, TANG Jun-wei, HE Qiang, YANG Hong-sheng (6)59
Effect of water depth on the growth of turbot (<i>Scophthalmus maximus</i>) in factory flow-through aquaculture	LI Ji-yuan, GUO Teng, XU Shi-hong, WU Le-le, YU Jia-chen, WANG Yan-feng, LI Jun (6)69
Isolation and identification of harmful algae during the cultivation of <i>Pyropia yezoensis</i>	DU Yi-fei, WANG Guang-ce, NIU Jian-feng, FENG Ze-zhong, WANG Xu-lei, ZHUO Jin-tao, SHAO Zhi-zhuo, HUAN Li, GONG Xiang-zhong (6)78

Effect of aquaculture site transfer on the composition of volatile organic compounds in <i>Ruditapes philippinarum</i>	YANG Ling, GUO He, XU Zhi-hui, SHAO Qian-wen, RAN Zhao-shou, ZHOU Cheng-xu (6)90
New distribution record of <i>Paranursia abbreviata</i> (Bell, 1855)	NING Xuan-xuan, HAN Qing-xi (6)95
Isolation and identification of a pathogenic bacterium causing bleaching disease in the gametophytes of <i>Saccharina japonica</i>	HAN Yi-xiao, REN Yi-fei, ZHUANG Ying-rui, CHEN Yao, ZHONG Qiu-lian, QIU Qi-ying, CHEN De-fu, WANG Gao-ge (7)64
Diversity of marine nematodes and the descriptions of four new record species from the intertidal zone of the Southern Yellow Sea	WU Qing-hua, HAO Ying-dong, CHU Meng-di, SUN Jing (7)73
Fish biodiversity and community structure characteristics of Wuzhizhou Island, Sanya	LUO Hui-gui, WANG Jia-yi, XIE Zhen-yu, LI Jian-long, ZHANG Xiang (7)86
Physical mechanism of the intensity change of Typhoon Haima based on a simple typhoon model	YANG Qian, HE Hai-lun (7)95
Community characteristics of macrozoobenthos in the Miaodao Archipelago in summer	ZHANG Yue, YU Guo-xu, XU Yong, LI Xin-zheng, WANG Jin-bao, SUI Ji-xing (7)110
Macrobenthos feeding functional groups in the intertidal flats of the Liaohe Estuary	MENG Xiang, YUAN Xiu-tang, ZHANG An-guo, QI Yue, WU Nan, YUAN Lei, KANG Jing, SONG Gang (7)121
Preliminary screening of the short-term preservation conditions for <i>Pinctada maxima</i> sperm	HUANG Xing-mei, ZHAO Wang, DENG Zheng-hua, WEN Wei-geng, CHEN Ming-qiang, WANG Yu, YU Gang (7)129
Toxicity test and median lethal concentration of <i>Vibrio harveyi</i> for the blood clam <i>Tegillarca granosa</i>	YANG Qian-yuan, LI Min, HU Gao-yu, CHEN Ran, XIAO Guo-qiang, TENG Shuang-shuang (7)137
Antibiotic resistance of <i>Escherichia coli</i> and <i>Enterococcus</i> spp. in Sansha Bay, China	LI Xiang-qian, LI Xiao-dong, LIN Yong-hao, ZHANG Wei, XU Han, YANG Gui-qin, LU Wei-jing, YU Dao-jin, CHEN Xin-hua (7)148
Descriptions of two newly recorded free-living marine nematode species isolated from the Yellow Sea	LV Yan-wei, WANG Meng-na, LIANG Hui-xin, WANG Chun-ming (7)154
Effect of acute ammonia stress on the plasma biochemical indexes of <i>Sebastes schlegelii</i>	GAO Yun-tao, GAO Yun-hong, WANG Jia-wei, LI Ming-yue, QU Jiang-bo, JIA Yu-dong, MENG Zhen (8)59
Study on the growth process and attachment strength of marine-fouling barnacles	LI You-chi, WANG Gui, WU Jing-quan, DENG Pei-chang, ZHANG Fu-quan, HUANG Jun-yi (8)67
Design and development of real-time communication system for ocean observation data based on Beidou short messages	JIANG Bin, XU Zhen-hua, GE Zhen-ying, YANG Shu-guo, CHEN Yong-hua (8)74
Effect of the LED spectrum on retinal morphology of <i>Sebastes schlegelii</i>	WU Yan-ling, SUN Fei, CAI Hao-wei, LI Xin, LIU Ying, LIU Song-tao, MA He (9)80
State of carbon balance and impact factors of marine fishery in China	TIAN Hao-dong, SUN Sheng-jie, LI Wei-bo, QIAO Zhi-yi (9)90
Resource tradeoff between coloring and antioxidation of astaxanthin in <i>Litopenaeus vannamei</i> under salinity stress	YANG Meng-xuan, WANG Bao-jie, LIU Mei, JIANG Ke-yong, ZHONG Chen, WANG Lei (10)42
Characteristics of microplastic in different industrial wastewater sources along the coast of Shandong Province	LI Xiao-ya, LIU Juan, ZHENG Shan, LIANG Jun-hua, ZHU Ming-liang, LI Qing-jie, SUN Xiao-xia (10)51
Characteristics of the shellfish community structure and its correlation with environmental factors in the southern tidal flats of Bohai Bay	JIANG Wen-liang, CHEN Sheng-lin, LI Yong-ming, ZHANG De-pu, LIU Dong, LI Min, GAO Meng-juan, LV Zhen-bo, REN Zhong-hua (10)64
Application of fuzzy analytic hierarchy process in the quality evaluation of sub-bottom profile data	KONG Min, WANG Feng-fan, GENG Shan-shan, YU Jia, SHU Yu-ting (10)75

Artificial reef exploration based on Phase Differencing Bathymetric Sonar in Laizhou Bay	LIU Yu-bin, ZHANG Jian-xing, SONG Yong-dong, ZHANG Yi-han, LUAN Zhen-dong (10)86
Effect of two different marine biomaterials on acute wound repair in rats	WANG Lei, LV Kang-ning, LI Wen-jun, WANG Kai, JIANG Xiao-rui, QIN Song (10)93
Effects of spectra on digestion, metabolic rhythm, and physiological stress of <i>Sebastes schlegelii</i>	FANG Ying-ying, CHEN Lu-lu, LIU Song-tao, SUN Fei, WU Yan-ling, LI Xin, LIU Ying, MA He (10)111
A study on sperm ultrastructure in the whitespotted conger, <i>Conger myriaster</i>	SHI Bao, WANG Chen-gang, TANG Xiao-hua, ZHAO Xin-yu, YAN Ke-wen, MA Xiao-dong (10)120
Method to retrieve ocean current from optical images based on UAV	YANG Jing, CHEN Zhong-biao, HE Yi-jun, SUN Run-xia (11)96
Analysis and enlightenment of a multispecies case study on the genetic connectivity between the Yellow and the East Seas	ZHAO Feng, WANG Zi-han, CAO Ling, ZENG Cong (11)109
Response characteristics of marine <i>Synechococcus</i> under different nitrate concentrations	SHI Feng, ZHOU Yu-ting, LI Jia-lin, GAO Hui-wang, QIN Song (11)120
Decoding and geophysical applications based on scientific fish finder data	CHE Hao-han, XING Lei, LIN Yu-zhao (11)131
Distribution, ecological features, and threats to <i>Ruppia</i> populations between Liaoning and Zhejiang, China	GU Rui-ting, XU Shao-chun, YUE Shi-dong, XU Shuai, ZHANG Yu, ZHANG Xiao-mei, ZHOU Yi (12)79
Preliminary study on the community structure of macrobenthos in the artificial reef area of Xiaozhushan Island	SUN Xue-ting, YU Hao-lin, TANG Yan-li, YU Meng-jie, ZHAO Wei, SHENG Hua-xiang (12)92
Effect of Spirulina phycocyanin on intestinal flora of rats with alcoholic liver injury	WANG Jing, ZANG Fan, QIN Song (12)101

REVIEWS

Weathering, ecological impacts and environmental risk assessment of oil spills in marine ecosystem	ZHANG Hui, MU Qing-lin, HAN Xi-xi, WANG You (1)107
Review of the ecological effects of constructing the Bohai Sea Crossing Corridor	LIU Bing-liang, SU Jin-bao, MA Jian-zhang (1)118
Atmospheric dry and wet deposition of black carbon and source apportionment in offshore and coastal zones of China over the past 20 years	FENG Chen-long, XING Jian-wei, YUAN Hua-mao, SONG Jin-ming, LI Xue-gang, MA Jun (2)85
Review of organophosphate esters in seawater and marine sediments	LIANG Gui-zhu, ZHANG Yu-feng, LIU Ying, CHENG Xue-wen, ZHANG Tao, LIU Zhi-qiang, YANG Meng, JIANG Ying, LIU Jia-qi (2)99
Identification of the spexin system and its physiological functions in fish	TIAN Zhen-fang, WANG Bin, CUI Ai-jun, XU Yong-jiang, LIU Xue-zhou, JIANG Yan, TIAN Yun-chen (2)108
Review of marine heatwave research based on CiteSpace	CHEN Qiao-jun, LI De-lei, FENG Jian-long (2)124
Selection method of remotely operated vehicles for marine scientific research	ZHOU Xin, LIU Wen-bo, WANG Feng-jun, ZHENG Jia-heng, SUN Yang, ZHAO Guo-xing, WU Yong-ting (2)134
Research progress on the difference in toxin production and factors influencing production in <i>Prorocentrum lima</i>	ZHANG Hao-yu, WU Hai-yan, DONG Chen-fan, ZHENG Guan-chao, GUO Meng-meng, TAN Zhi-jun (3)146
A review of the effects of herbicides on seagrass	LIU Ming-jie, GAO Ya-ping, ZHANG Yu, YUE Shi-dong, ZHOU Yi (4)175
Current status of marine nanoplastic pollution and its ecotoxicological effects on bivalves	YANG Can, XU Wen-zhe, SUN Jun (4)183
Hyperspectral remote sensing in the Yellow River Delta wetland	LI Zhong-wei, GUO Fang-ming, REN Guang-bo, MA Yi, XIN Zi-qi, HUANG Wen-hao, SUI Hao, MENG Qiao (5)175

Research progress on the remote sensing inversion algorithm for water transparency	
.....	ZHAO Chun-yan, YU Ding-feng, ZHOU Yan, YANG Lei, GAO Hao, YAO Hui-ping (5)185
Advances in marine algicidal microorganism research.....	LIU Shan-shan, YU Zhi-ming, CAO Xi-hua, SONG Xiu-xian (6)107
Preservation of sedimentary organic carbon protected by iron: a review	
.....	LIN De-ju, WANG Nan, LI Hao-shuai, ZHANG Hai-yang, BAO Rui (6)123
Microplastic accumulation in aquatic animals and its potential risks toward human health.....	WANG Na, ZHANG Shi-cui (6)129
Review of the transport mechanism and environmental effects of microplastics in coastal aquifers	
.....	ZOU Yin-qiao, CHEN Guang-quan, YU Hong-jun, SONG Fan, WANG Yan-cheng, ZHAO Wen-qing (6)143
Current circumstances, problems, and strategies of microalgae industry standardization in China	
.....	ZHOU Hao-yuan, LIU Xiang, GAO Zheng-quan, MENG Chun-xiao, LI Bin, XIANG Wen-zhou (6)151
Stoichiometric imbalance in the rates of nutrient and phosphorus depletion in coastal China with implications for the ecological environment	RAN Xiang-bin, WEI Qin-sheng, YU Zhi-gang (8)89
Application of environmental RNA technology in biodiversity monitoring of the aquatic ecosystem	
.....	LI Wen-qiong, DAI Shu-qin, ZHANG Hui, XIAN Wei-wei (8)100
Application of the CRISPR/Cas9 gene editing system in microalgae	LIU Li-xian, GUO Li, YANG Guan-pin (8)111
Culture and breeding of <i>Chlamys farreri</i> in China: reviews and prospects	
.....	YU Dao-de, LIU Kai-kai, ZHANG Shao-chun, QIU Zhao-xing (8)119
In-situ measurement technology of suspended particle concentration of seawater	
.....	CHEN Yong-guo, ZHANG Tao, LIU Zhi-kui, CHEN Yong-hua, ZOU Bao-ping, YE Liang (8)130
Advances in primary productivity and carbon biomass detection of marine phytoplankton	
.....	WANG Qing-xuan, CUI Zheng-guo, QU Ke-ming, WANG Qing-kui, WEI Yu-qiu, SUN Jun (8)140
Study and application of a shell soil conditioner	
.....	LIU Wei-xiang, QIN Yu-kun, FAN Zhao-qian, ZHANG Hai-bo, WANG Zhong-wei, LI Peng-cheng (8)149
Dynamics and prospects of the implementation of the United Nations Decade of Ocean Science for Sustainable Development (2021–2030)	WANG Lin, LI Jing, ZHOU Hui, WANG Fan (9)102
Sample pretreatment and determination of fluoroquinolone antibiotics in marine environments	
.....	WEN Li-lian, SONG Jin-ming, LI Xue-gang, MA Jun, DAI Jia-jia, YUAN Hua-mao, DUAN Li-qin, WANG Qi-dong (9)118
Effect of offshore ocean acidification on the biogeochemical properties of trace elements at the sediment–seawater interface	
.....	GAO Wen-jing, QU Bao-xiao, YUAN Hua-mao, SONG Jin-ming (9)130
Classification and characteristics of the risk organisms in cold source water intake area of coastal nuclear power plants	
.....	SHEN Ping-ping, YU Xian-bo, MENG Bu-fan, WU Cun-chao (9)140
A review of the oviduct glands of cartilaginous fishes	
.....	GAO Guang, XIAO Zhi-zhong, MA Wen-hui, PAN Zhao, LI Jun (9)150
Research progress on chitin extraction methods	ZHOU Yi, XING Rong-e, YANG Hao-yue, LIU Song, LI Peng-cheng (11)143