

Report on the Fishes of Shark Reef Marine Reserve, Beqa Passage, Fiji, with a Qualitative Comparison of Fish Assemblages Before and After the COVID-19 Global Pandemic

John L. Earle, Robert K. Whitton, Brian D. Greene and Richard L. Pyle

Bernice Pauahi Bishop Museum
Honolulu, Hawaii, USA

Introduction

Shark Reef Marine Reserve (SRMR) is a small Marine Protected Area (MPA) located in the Beqa Passage off the south shore of Fiji's main island Viti Levu (centered at approximately 18°18'S, 178°01'E; Figure 1). The commercial dive operation, Beqa Adventure Divers, specializes in providing recreational divers with an experience to closely observe large predatory fishes [particularly Bull sharks, *Carcharhinus leucas* (Valenciennes in Müller & Henle, 1839), but also several other species of sharks and large Jacks (Carangidae)], through controlled baiting and feeding activities. They have been operating at Shark Reef since 2004 under an agreement with local villages and the Fiji Ministry of Fisheries. According to that agreement, Beqa Adventure Divers was given an exclusive right to operate at Shark Reef within a local established and enforced no-fishing zone. In return, villages holding traditional fishing rights in this area were compensated through an area access fee charged to dive customers. As an additional benefit, local villagers were trained and hired to be the workforce for the dive operation and trained as Fish Wardens to monitor illegal activities such as fishing. In 2014 the government of Fiji established the Shark Reef Marine Preserve, a fully protected National Marine Park, which formalized the agreement forged in 2004. The diving operation, which involves boats and crew on site on most days of the year, also serves as *de-facto* enforcement to prevent poaching by fishermen within the SRMR.

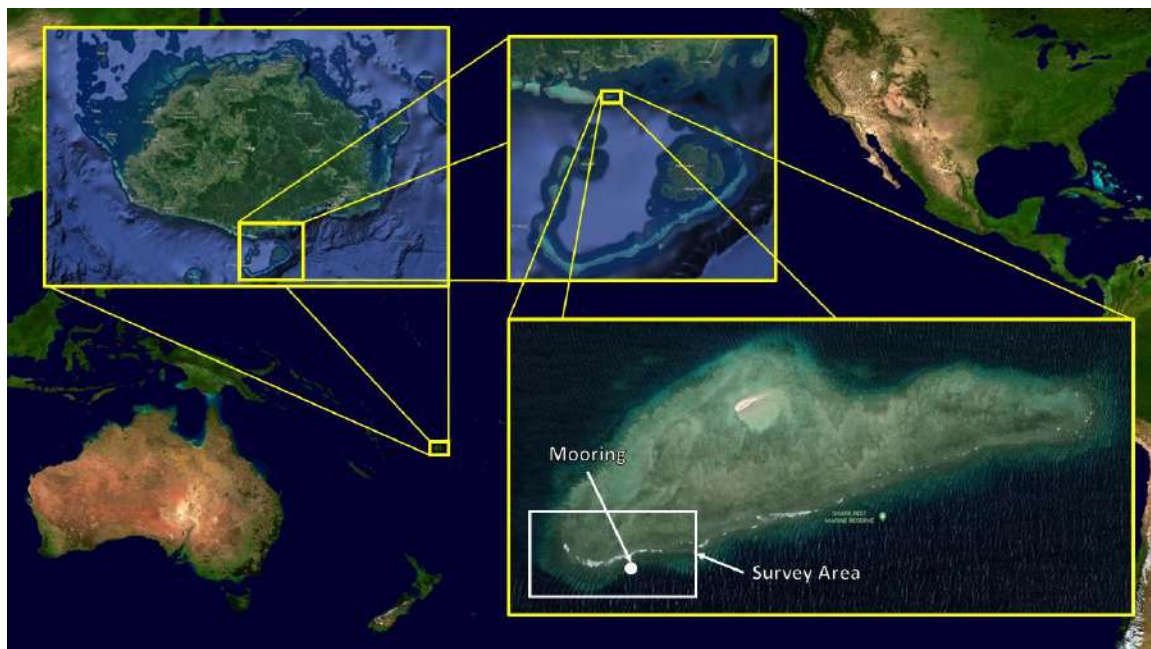


Figure 1. Location of Shark Reef Marine Reserve (SRMR), showing survey area.

Starting in 2004, researchers associated with Bernice P. Bishop Museum in Honolulu began a series of expeditions in collaboration with Beqa Adventure Divers to conduct qualitative surveys of the fishes inhabiting Shark Reef (Brunnschweiler & Earle, 2006). In addition to the initial survey in 2004, subsequent survey expeditions were conducted in 2008, 2009, and 2010. Each survey used similar methods (described below), with the primary purpose being to develop a comprehensive checklist of all species observed at Shark Reef and nearby areas.

Shortly after the outbreak of the COVID-19 global pandemic, Fiji suspended air travel in late March of 2020, effectively halting all tourist activity within the country. As a consequence, Beqa Adventure Divers was forced to stop operating their activities at Shark Reef. Cash flow to local villages from fees and employment also ceased, along with the robust *de-facto* enforcement of the SRMR “no fishing” regulations. Also during this period, many other people in Fiji employed by various segments of the tourism market (e.g., hotels and other industries that cater to tourists) needed to find revenue and food by other means, drastically increasing fishing activity and associated fishing pressure. This was evidenced by the emergence of dozens of ad-hoc roadside vendors selling fresh fish, along with many people who sold fish from their homes by means of social media advertisements.

With funding from the United Nations’ Global Fund for Coral Reefs program, another survey of fishes was conducted in May of 2022, after tourist travel to Fiji and the Beqa Adventure Divers shark experience diving activities had resumed. This report includes a comprehensive checklist of all fish species observed at SRMR compiled over the course of 18 years of diving activities, and summarizes qualitative comparisons of the fish assemblages documented during surveys before and after the COVID-19 global pandemic.

Materials and Methods

The authors of this report have extensive experience conducting qualitative surveys of fishes at SRMR since 2004, shortly after the start of the shark-feed operation in 2003. Brunnschweiler & Earle (2006) provides a list of fish species seen during seven scuba dives (approximately 10 hours of underwater observation) in 2004. Subsequent survey expeditions were conducted using similar methods during 2008, 2009, 2010, and 2022. The team also visited the reef in 2019, but did not conduct a qualitative survey that year.

Over the course of the five survey expeditions, a total of 77 dives were conducted, resulting in 3,667 individual observations of species presence at Shark Reef. These expeditions were conducted at various times of the year, and included varying numbers of diving observers (Earle was present for all expeditions). A summary of data relating to these surveys is included in Table 1.

Table 1. Summary of Survey Expeditions, showing dates, survey divers, number of dives, number of observed species, and total number of observations.

Year	Dates	Divers	Dives	Sp.	Obs.
2004	28 Sep 2004 – 1 Oct 2004	Earle	7	269	279
2008	28 Jan 2008 – 12 Feb 2008	Earle, Whitton	20	367	1,170
2009	2 Feb 2009 – 14 Feb 2009	Earle, Whitton	18	261	541
2010	15 Feb 2010 – 15 Mar 2010	Earle, Pyle, Whitton	22	287	837
2022	4 May 2022 – 14 May 2022	Earle, Greene, Pyle, Whitton	10	548	840
Totals			77	516*	3,667

* Total Species count represents total unique species recorded across all expeditions, and is not cumulative.

Survey methods were similar across all expeditions in all years. Trained ichthyologists, all of whom are familiar with Indo-Pacific fish species identification, conducted dives using open-circuit SCUBA or closed-circuit rebreathers averaging about 1-2 hours per dive. Divers recorded the presence (and, in some cases, approximate abundance) of every observed species of fish. Most observations were documented using digital underwater video or still-image camera systems. In some cases, observations and additional information were documented using underwater slates. Dive depth ranged from the shallow reef crest (awash at low tide) to occasional descents to 50 meters (m) depth, but the majority of observations were made in the depth range of the shark feeds, from 5 to 30 m. All dives were made during daylight hours, between approximately 9 a.m. and 5 p.m. The fish surveys were centered around the shark-feed boat mooring (18.301°S, 178.017°E) to areas that could be comfortably covered in a single scuba dive (~150 m) east or west from the mooring following the orientation of the reef. To the west the team recorded fauna from the mooring to the western-most point of the reef, and to the east as far as a prominent southward extension of the reef known as “the point”.

Visual census techniques permitted qualitative observations of fish species without disturbing the fauna, which is particularly acclimated to the presence of divers at SRMR. Approximate abundance of observed species was recorded for the 2008 and 2022 expeditions. Abundances of species were recorded on an “order-of-magnitude” scale, with values including “0” (none seen during a dive), “1” (only a single individual seen during a dive), “2-10”, “11-100”, “101-1000”, and “more than 1,000” – representing the approximate number of individuals collectively observed during any single dive. Aggregate abundance scores on a per-expedition basis were taken as the highest abundance score recorded for any dive of the expedition.

All data (including videos and images, with associated metadata) were captured in the “Explorers Log” data management system (<http://explorers-log.com:81>), and summary data related to these surveys can be accessed at http://explorers-log.com:81/srmr_2022.cfm.

Results

Appendix 1 represents a complete list of fish species that have been reported from Shark Reef. Species names are based on recent evaluations of the latest taxonomic information, and therefore do not always reflect the names recorded at the time of the individual surveys. A total of 516 species from 61 different fish families have been recorded from Shark Reef. This includes all species observed during at least one of the survey expeditions (502 species), as well as an additional 16 species reported separately from these surveys (usually documented with video or still images). Appendix 1 indicates which survey year each species was recorded, and species not recorded during surveys but reported from Shark Reef based on other sources are included in the “Other” column of the Appendix. Appendix 1 also includes a column containing the highest abundance score (per dive) for species prior to the COVID-19 global pandemic, as well as a column representing the highest abundance score (per dive) during the 2022 survey expedition (soon after Beqa Adventure Divers resumed regular shark-feeding dive operations at Shark Reef, following the pandemic). The granularity of these values are qualitative in nature, representing an approximate order-of-magnitude abundance of each species. Of the species with qualitative abundance estimate scores for survey years both prior to the Pandemic (2004–2010) and following the pandemic (2022), the majority (204 of 322 species, or 63%) remained unchanged. A total of 56 species showed an increase in abundance (51 by one order of magnitude, and 5 by two orders of magnitude) pre- vs. post-pandemic, and a total of 62 species showed a decrease in abundance (57 by one order of magnitude, and 5 by two orders of magnitude).

Discussion

While the primary aim of these surveys was to detect potential impacts of the shark-feeding activity on overall reef-fish assemblages, the methods used during these surveys were primarily intended to assess the presence of fish species at Shark Reef, and are qualitative in nature. However, for several of the surveys, approximate abundance for each species was recorded and scored at a qualitative level representing the approximate order-of-magnitude of numbers of individuals observed during a single dive. Thus, while this report does present information that has a quantitative basis, all results and conclusions should be considered qualitative.

These observation methods are further limited in that they underestimate small and cryptic species not routinely seen by divers during the daytime. Nocturnal assessment was deemed unsafe due to the presence of numerous large sharks. Although no quantitative comparisons between observations made using SCUBA vs. closed-circuit rebreathers, qualitatively there was no meaningful difference in the total species observed, or approximate abundance estimates for each species, using the two different diving technologies.

Despite the qualitative nature of these data, we believe that a comparison of approximate abundance data before and after the COVID-19 global pandemic has value. Most of the species documented in the surveys are small, not easily caught by hook and line or other fishing techniques, and thus not sought by fishermen. Any recorded changes in abundance in such groups as damselfishes (Pomacentridae), butterflyfishes (Chaetodontidae), angelfishes (Pomacanthidae), gobies (Gobiidae), blennies (Blenniidae), and smaller species of wrasses

(Labridae) and surgeonfishes (Acanthuridae) are likely not related to changes in fishing activity that may have occurred during the pandemic. Instead, such changes likely reflect imprecision in abundance estimate methods, natural fluctuations in species abundance, or the subjectivity of our visual census technique and chance encounters with local aggregations of certain species.

In contrast to the overall stasis of qualitative abundance of these small fishes, the pre- and post-pandemic abundance of large, edible, easily caught, or otherwise sought-after species appears to show a sharp decline in abundance within the SRMR following the pandemic. For example, larger groupers (Serranidae) in genera *Cephalopholis*, *Epinephelus*, *Plectropomus*, and *Variola* decreased in estimated qualitative abundance by an order of magnitude for eight species in 2022 compared to surveys conducted prior to the pandemic (Figure 2). There were no increases in estimated abundance for any of the other species, and seven species seen prior to the pandemic were not recorded during the 2022 survey. This pattern is unlikely to be caused by chance or random population fluctuations, especially given the overall stability in other fish families, and in genera of small Seranidae such as *Pseudanthias*.

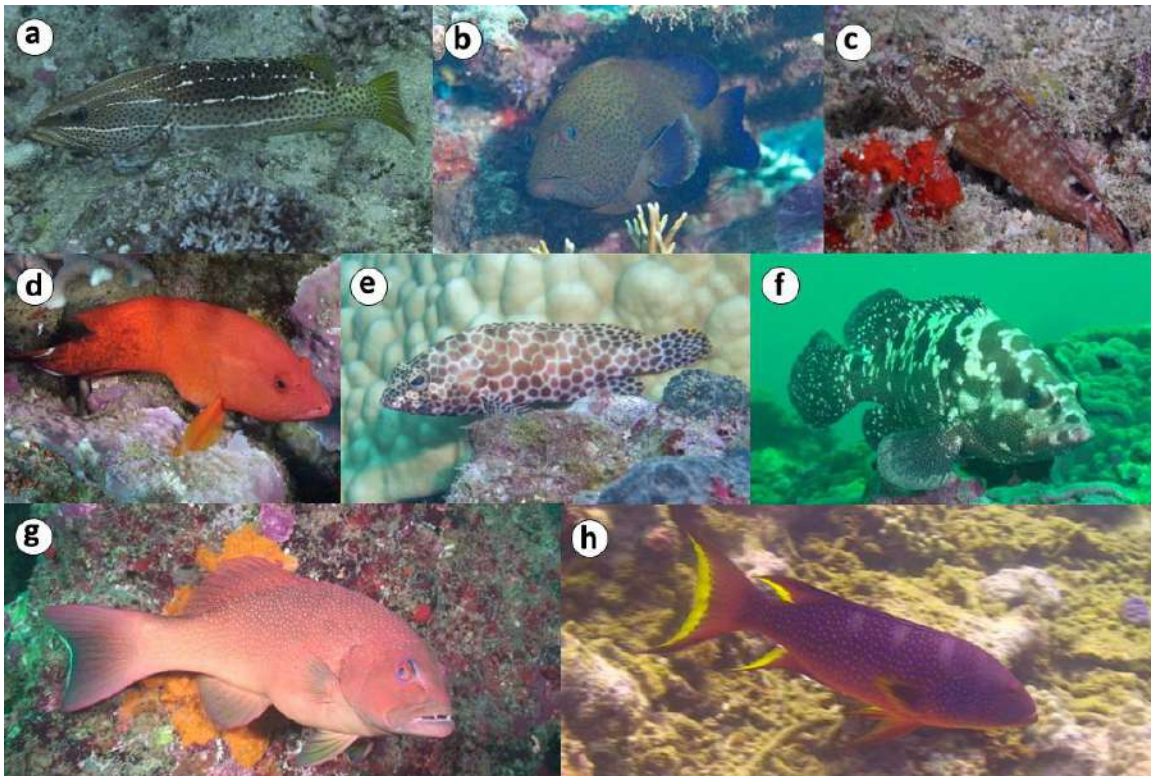


Figure 2. The qualitative abundance of each of these eight species of grouper (Serranidae), each of which is sought as a food source by fishermen, was reduced by one order of magnitude during the 2022 survey, compared with qualitative abundance during surveys prior to the COVID-19 global pandemic. Species include: (a) *Anyperodon leucogrammicus*; (b) *Cephalopholis argus*; (c) *Cephalopholis leopardus*; (d) *Cephalopholis urodeta*; (e) *Epinephelus merra*; (f) *Epinephelus polyphkadion*; (g) *Plectropomus leopardus*; (h) *Variola louti*.

The Giant Trevally (*Caranx ignobilis*), is another example of a species likely winnowed by uncontrolled fishing following the breakdown of fishing regulations in SRMR. This species was

prominent on the reef in large schools, especially around the shark feed area, during surveys prior to the pandemic (Figure 3; see also Neumann, 2011), but declined two orders of magnitude and was rarely seen during the 2022 survey.



Figure 3. Giant Trevally (*Caranx ignobilis*) were highly abundant prior to the COVID-19 pandemic, but only a few individuals were observed during the 2022 survey. Photo: Lill Haugen.

More generally, the subjective experience of diving SRMR in 2022 was dramatically different from any of the prior surveys and the two days of diving made by the BPBM team in 2019 when no survey was made. The small colorful reef fishes and the sharks are still abundant, but there is a clear reduction in the presence of species from among the middle tiers of the food chain, with the loss of large and mid-size groupers, snappers and jacks being especially obvious. While we cannot confirm that the observed changes in species abundance at Shark Reef following the global pandemic are due to increased fishing pressure and/or reduced enforcement of the SRMR fishing restrictions, circumstantial evidence of a causal relationship is difficult to dismiss outright. Besides the observed qualitative changes in selected species abundance, there was a subjective but unambiguous increase in the number of fish hooks and other fishing gear embedded in and around the jaws and fins of the sharks that frequent Shark Reef (Figure 4). This may not be directly related to changes in fishing activities at SRMR, but is possibly a result of increased fishing pressure across Fiji as a whole, both directly, and indirectly by a reduction of availability in prey for sharks due to such increased fishing pressure.



Figure 4. Hooks and other fishing gear embedded in sharks was anecdotally much more prevalent during the 2022 survey than in prior surveys.

Conclusions and Recommendations

Although this report is necessarily constrained by the qualitative nature of the methodology and observations, we can assert with high confidence, based on our extensive experience both at Shark Reef and across the tropical Indo-Pacific, that the nature of the fish assemblage in 2022 was dramatically different compared to any of the surveys prior to the COVID-19 global pandemic, particularly with respect to species of fishes that tend to be sought by fishermen for consumption as food. While we cannot rule out that some of this change occurred during the decade between 2010 (the most recent pre-pandemic survey) and 2020 (the start of the pandemic, with consequent loss of *de-facto* enforcement of protections and concurrent potential increase in fishing pressure), observations by Beqa Adventure Divers staff divers and our subjective impressions from 2019 did strongly suggest that most of the changes – especially those involving species sought by fishermen as food – occurred during the 2020-2021 timeframe (i.e., when *de-facto* protection enforcement was effectively eliminated and increase in demand for fishing increased).

We recommend that the fish populations at Shark Reef be monitored on a regular basis over the course of at least the next decade. This should include regular quantitative surveys (i.e., using transect lines and more robust quantitative methodology), as well as periodic follow-up surveys using the qualitative methods described herein. Such information will not only help refute or corroborate the inferred correlation between changes in certain fish species abundance with the global pandemic, but will also provide important insights on the pattern of population recovery (if it happens), thereby representing valuable insights into the general resilience of fish populations at Shark Reef in particular, and for a protected reef in general. If populations were, indeed,

impacted by increased fishing pressure and/or reduced protection enforcement, the restoration of enforcement and presumed reduction in fishing pressure following the global pandemic represents an excellent opportunity to study the efficacy of protected reefs and their associated protection.

Acknowledgements

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<https://fijisharkdiving.blogspot.com/2011/03/predation.html> Posted: 8 March 2011;
Accessed: 2 January 2022.








Appendix 1. Checklist of fishes from Shark Reef, Fiji










This Appendix represents a complete list of fish species that have been reported from Shark Reef, Fiji. Species names are based on recent evaluations of the latest taxonomic information, and do not always reflect the names recorded at the time of the individual surveys. Species observed during each of the five survey expeditions (2004, 2008, 2009, 2010 and 2022) are indicated with a grey bar and dot in each respective column. Species not recorded during any of the survey years, but recorded from Shark Reef outside of the surveys, are indicated with a grey bar and dot in the “Other” column. A qualitative abundance score including “1” (a maximum of one individual seen per dive), “2-10”, “11-100”, “101-1000”, and “1000-10000”, each representing the approximate order-of-magnitude abundance for each species observed during a single dive, is included for the aggregate survey expeditions prior to the COVID-19 global pandemic, and for the 2022 survey (after diving operations had resumed following the pandemic). A value of “None” indicates that the species was explicitly recorded as not seen, whereas a value of “?” indicates the absence of reliable information on approximate abundance. The column listed as “Change” represents the number of orders of magnitude difference between the pre-pandemic abundance estimates, and the 2022 survey abundance estimates. A representative image of each species is included, when available. In most cases, the image was taken at Shark Reef. In a few cases, where images of a species at Shark Reef are not available, an image recorded from elsewhere within Fiji is included.






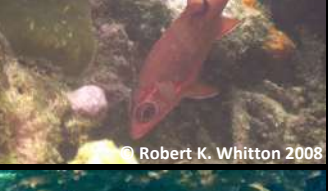


Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
Class: Chondrichthys Order: Carcharhiniformes Suborder: Scyliorhinoidei Family: Carcharhinidae										
<i>Carcharhinus albimarginatus</i> (Rüppell, 1835-1838)	●				●		1	1		
<i>Carcharhinus amblyrhynchos</i> (Bleeker, 1856)	●	●	●	●	●		2-10	11-100	1	
<i>Carcharhinus leucas</i> (Valenciennes in Müller & Henle, 1839)	●	●	●	●	●		11-100	11-100		
<i>Carcharhinus melanopterus</i> (Quoy & Gaimard, 1824)	●	●	●	●	●		2-10	2-10		
<i>Galeocerdo cuvier</i> (Péron & Lesueur in Lesueur, 1822)	●				●		None	1	1	







Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Negaprion acutidens</i> (Rüppell, 1835-1838)	●	●	●		●		1	2-10	1	 © Robert K. Whitton 2022
<i>Triaenodon obesus</i> (Rüppell, 1835-1838)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2008
Order: Orectolobiformes										
Suborder:										
Family: Ginglymostomatidae										
<i>Nebrius ferrugineus</i> (Lesson, 1831)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
Order: Rajiformes										
Suborder:										
Family: Mobulidae										
<i>Manta alfredi</i> (Anonymous & Krefft, 1868)	●						None	?		[No Image Available]
Family: Myliobatidae										
<i>Aetobatus ocellatus</i> (Kuhl in van Hasselt, 1823)	●	●		●	●		1	1		 © Robert K. Whitton 2010
Suborder: Myliobatoidei										
Family: Dasyatidae										
<i>Himantura fai</i> Jordan & Seale, 1906						●	None	None		 © Mike Neumann 2016
<i>Taeniura lessoni</i> Last, White & Naylor, 2016				●	●		1	1		 © Robert K. Whitton 2022
<i>Urogymnus asperrimus</i> (Bloch & Schneider, 1801)						●	None	None		 © Mike Neumann 2014




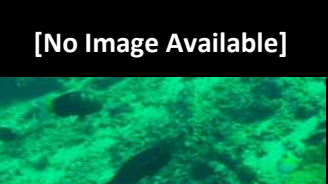

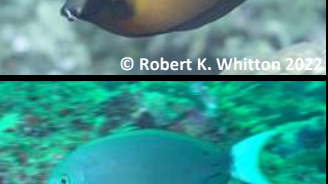

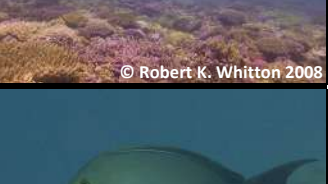

Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
Class: Actinopterygii										
Order: Anguilliformes										
Suborder:										
Family: Congridae										
<i>Gorgasia maculata</i> Klausowitz & Eibl-Eibesfeldt, 1959				●			2-10	?		 © Robert K. Whitton 2010
<i>Gorgasia preclara</i> Böhlke & Randall, 1981			●	●			2-10	?		 © Robert K. Whitton 2010
<i>Heteroconger hassi</i> (Klausowitz & Eibl-Eibesfeldt, 1959)		●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
Family: Muraenidae										
<i>Gymnothorax flavimarginatus</i> (Rüppell, 1830)	●	●		●			1	?		 © John L. Earle 2010
<i>Gymnothorax javanicus</i> (Bleeker, 1859)	●	●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Gymnothorax meleagris</i> (Shaw & Nodder, 1795)	●	●					1	?		 © Mike Neumann 2012
Order: Aulopiformes										
Suborder: Alepisauroidae										
Family: Synodontidae										
<i>Saurida gracilis</i> Quoy & Gaimard in Quoy & Gaimard, 1824			●	●	●		1	1		 © Robert K. Whitton 2010

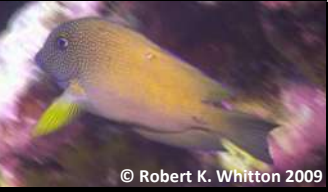


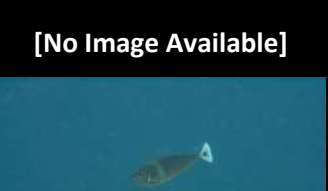
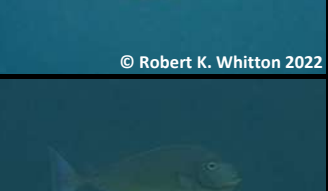
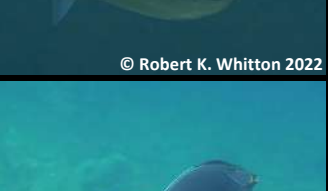


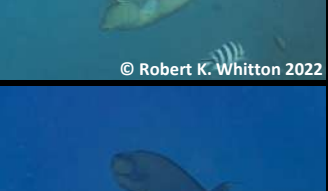
Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Synodus binotatus</i> Schultz in Schultz, Herald, Lachner, Welander & Woods, 1953			●	●	●		1	1		 © John L. Earle 2009
<i>Synodus dermatogenys</i> Fowler, 1912		●		●	●		2-10	1	-1	 © Robert K. Whitton 2008
<i>Synodus jaculum</i> Russell & Cressey, 1979		●					1	?		 © Robert K. Whitton 2008
<i>Synodus variegatus</i> (Lacépède in Lacépède, 1803)		●		●	●		11-100	1	-2	 © Robert K. Whitton 2022
Order: Beloniformes										
Suborder: Belonoidei										
Family: Belonidae										
<i>Tylosurus crocodilus</i> (Péron & Lesueur in Lesueur, 1821)				●	●		?	1		 © Robert K. Whitton 2022
Order: Beryciformes										
Suborder: Holocentroidei										
Family: Holocentridae										
<i>Myripristis berndti</i> Jordan & Evermann, 1903	●	●	●		●		11-100	2-10	-1	 © John L. Earle 2008
<i>Myripristis botche</i> Cuvier, 1829					●		?	2-10		[No Image Available]
<i>Myripristis hexagona</i> (Lacépède, 1802)		●		●	●		2-10	2-10		 © John L. Earle 2010









Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Myripristis kuntee</i> Valenciennes in Cuvier & Valenciennes, 1831	●	●	●		●		11-100	11-100		 © Robert K. Whitton 2009
<i>Myripristis murdjan</i> (Forsskål, 1775)	●	●			●		11-100	2-10	-1	 © Robert K. Whitton 2008
<i>Myripristis pralinia</i> Cuvier in Cuvier & Valenciennes, 1829	●	●		●	●		None	1	1	 © Robert K. Whitton 2022
<i>Myripristis violacea</i> Bleeker, 1851	●	●	●		●		2-10	2-10		 © John L. Earle 2009
<i>Myripristis vittata</i> Valenciennes in Cuvier & Valenciennes, 1831	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Neoniphon aurolineatus</i> (Liénard, 1839)		●		●	●		2-10	2-10		 © Robert K. Whitton 2010
<i>Neoniphon opercularis</i> (Valenciennes in Cuvier & Valenciennes, 1831)					●		?	1		[No Image Available]
<i>Neoniphon sammara</i> (Forsskål, 1775)	●	●	●	●	●		11-100	2-10	-1	 © John L. Earle 2010
<i>Sargocentron caudimaculatum</i> (Rüppell in Rüppell, 1838)	●	●		●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Sargocentron diadema</i> (Lacépède & Commerson in Lacépède, 1802)	●	●	●				1	?		 © John L. Earle 2008









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Sargocentron melanospilos</i> (Bleeker, 1858)		●		●	●		1	1		 © Robert K. Whitton 2010
<i>Sargocentron microstoma</i> (Günther, 1859)	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Sargocentron praslin</i> (Lacépède in Lacépède, 1802)		●	●		●		11-100	1	-2	 © Robert K. Whitton 2022
<i>Sargocentron punctatissimum</i> (Cuvier in Cuvier & Valenciennes, 1829)			●				1	?		 © Robert K. Whitton 2009
<i>Sargocentron spiniferum</i> (Forsskål, 1775)	●	●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Sargocentron tiere</i> (Cuvier in Cuvier & Valenciennes, 1829)		●					2-10	?		 © Robert K. Whitton 2008
<i>Sargocentron violaceum</i> (Bleeker, 1853)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
Order: Clupeiformes Suborder: Clupeoidei Family: Clupeidae										
<i>Spratelloides delicatulus</i> (Bennett, 1832)			●	●			11-100	?		 © Robert K. Whitton 2010
Order: Gobiesociformes Suborder: Family: Gobiesocidae										



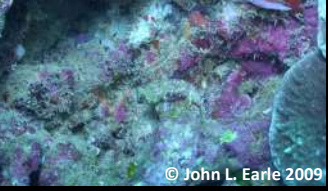




Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Discotrema crinophila</i> Briggs, 1976			●				2-10	?		 © Robert K. Whitton 2009
Order: Gonorynchiformes Suborder: Chanoidei Family: Chanidae										
<i>Chanos chanos</i> (Forsskål, 1775)				●			2-10	?		[No Image Available]
Order: Lophiiformes Suborder: Antennaroidei Family: Antennariidae										
<i>Antennarius nummifer</i> (Cuvier, 1817)			●				1	?		 © John L. Earle 2009
Order: Perciformes Suborder: Acanthuroidei Family: Acanthuridae										
<i>Acanthurus albipectoralis</i> Allen & Ayling, 1987				●			?	?		 © John L. Earle 2010
<i>Acanthurus blochii</i> Valenciennes in Cuvier & Valenciennes, 1835	●	●					2-10	?		[No Image Available]
<i>Acanthurus lineatus</i> (Linnæus, 1758)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Acanthurus maculiceps</i> (Ahl, 1923)					●		?	2-10		 © Robert K. Whitton 2022
<i>Acanthurus mata</i> (Cuvier, 1829)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022

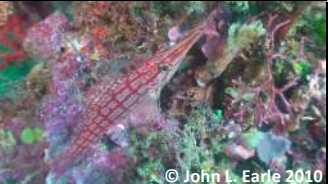


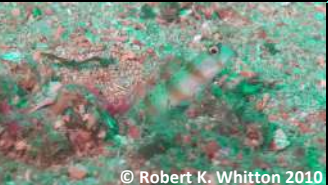



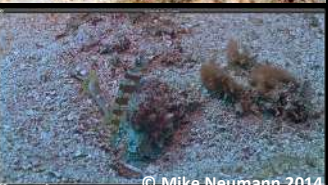
Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Acanthurus nigricans</i> (Linnæus, 1758)	●	●			●		1	2-10	1	 © John L. Earle 2008
<i>Acanthurus nigricauda</i> Duncker & Mohr, 1929	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Acanthurus nigrofuscus</i> (Forsskål, 1775)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Acanthurus nigroris</i> Valenciennes in Cuvier & Valenciennes, 1835	●						2-10	?		[No Image Available]
<i>Acanthurus olivaceus</i> Bloch, Schneider & Schneider in Bloch & Schneider, 1801		●	●		●		2-10	2-10		 © Robert K. Whitton 2009
<i>Acanthurus pyroferus</i> von Kittlitz, 1834	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Acanthurus thompsoni</i> (Fowler, 1923)	●	●	●	●	●		2-10	2-10		 © John L. Earle 2010
<i>Acanthurus triostegus</i> (Linnæus, 1758)		●			●		11-100	101-1000	1	 © Robert K. Whitton 2008
<i>Acanthurus xanthopterus</i> Valenciennes in Cuvier & Valenciennes, 1835	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Ctenochaetus binotatus</i> Randall, 1955	●	●	●		●		11-100	2-10	-1	 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Ctenochaetus cyanocheilus</i> Randall & Clements, 2001	●		●				1	?		 © Robert K. Whitton 2009
<i>Ctenochaetus striatus</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)	●	●		●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Naso annulatus</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)				●			2-10	?		 © Robert K. Whitton 2010
<i>Naso brachycentron</i> (Valenciennes in Cuvier & Valenciennes, 1835)				●			1	?		[No Image Available]
<i>Naso brevirostris</i> (Cuvier, 1829)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Naso hexacanthus</i> (Bleeker, 1855)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Naso lituratus</i> (Forster in Bloch & Schneider, 1801)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Naso lopezi</i> Herre, 1927					●		?	11-100		 © Robert K. Whitton 2022
<i>Naso unicornis</i> (Forsskål, 1775)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Naso vlamingii</i> (Valenciennes in Cuvier & Valenciennes, 1835)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022





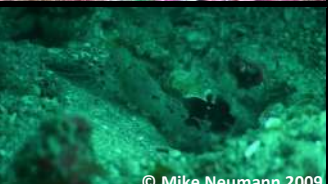
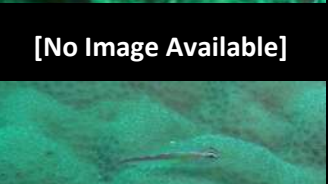



Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Zebrasoma scopas</i> (Cuvier, 1829)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Zebrasoma veliferum</i> (Bloch, 1795)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Ehippidae										
<i>Platax orbicularis</i> (Forsskål, 1775)						●	None	None		[No Image Available]
<i>Platax teira</i> (Forsskål, 1775)		●					2-10	?		 © John L. Earle 2008
Family: Siganidae										
<i>Siganus argenteus</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)		●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Siganus doliatus</i> Guérin-Méneville, 1829-1838	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Siganus punctatus</i> (Schneider & Forster in Bloch & Schneider, 1801)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Siganus spinus</i> (Linnæus, 1758)					●		?	2-10		[No Image Available]
<i>Siganus uspi</i> Gawel & Woodland, 1974	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Zanclidae										
<i>Zanclus cornutus</i> (Linnæus, 1758)	●	●			●		2-10	11-100	1	 © Robert K. Whitton 2022










Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
Suborder: Blennioidei										
Family: Blenniidae										
<i>Atrosalarias fuscus</i> (Rüppell in Rüppell, 1838)						●	None	None		 © Mike Neumann 2009
<i>Cirripectes castaneus</i> (Valenciennes in Cuvier & Valenciennes, 1836)	●	●					2-10	?		[No Image Available]
<i>Cirripectes stigmaticus</i> Strasburg & Schultz, 1953		●	●	●			11-100	?		 © Robert K. Whitton 2008
<i>Cirripectes variolosus</i> (Valenciennes in Cuvier & Valenciennes, 1836)	●	●	●				2-10	?		 © Robert K. Whitton 2009
<i>Ecsenius bicolor</i> (Day, 1888)	●		●				1	?		 © John L. Earle 2009
<i>Ecsenius pardus</i> Springer, 1988			●				1	?		 © John L. Earle 2009
<i>Exallias brevis</i> (Kner, 1868)		●			●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Meiacanthus oualanensis</i> (Günther, 1880)	●	●	●		●		2-10	2-10		 © John L. Earle 2009
<i>Plagiotremus laudandus</i> (Whitley, 1961)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022










Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Plagiotremus rhinorhynchus</i> (Bleeker, 1852)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Plagiotremus tapeinosoma</i> (Bleeker, 1857)		●	●	●			2-10	?		 © John L. Earle 2009
Suborder: Callionymoidei										
Family: Callionymidae										
<i>Callionymus tethys</i> Fricke, 1993		●					1	?		[No Image Available]
<i>Synchiropus morrisoni</i> Schultz in Schultz, Chapman, Lachner & Woods, 1960		●	●				1	?		 © John L. Earle 2009
Suborder: Cirrhitidae										
Family: Cirrhitidae										
<i>Cirrhitichthys falco</i> Randall, 1963	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Cirrhitichthys oxycephalus</i> (Bleeker, 1855)		●			●		1	1		 © Robert K. Whitton 2008
<i>Cirrhitus pinnulatus</i> (Forster in Bloch & Schneider, 1801)					●		?	2-10		[No Image Available]
<i>Cyprinocirrhites polyactis</i> (Bleeker, 1874)				●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Neocirrhites armatus</i> Castelnau, 1873	●	●					11-100	?		 © Robert K. Whitton 2008







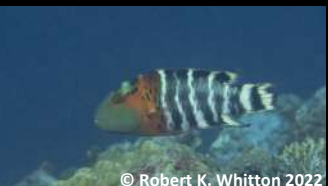


Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Oxycirrhites typus</i> Bleeker, 1857			●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Paracirrhites arcatus</i> (Cuvier in Cuvier & Valenciennes, 1829)	●	●		●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Paracirrhites forsteri</i> (Schneider in Bloch & Schneider, 1801)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Paracirrhites hemistictus</i> (Günther, 1874)	●	●			●		1	2-10	1	[No Image Available]
Suborder: Gobioidei										
Family: Gobiidae										
<i>Amblyeleotris arcupinna</i> Mohlmann & Munday, 1999				●			2-10	?		 © Robert K. Whitton 2010
<i>Amblyeleotris ellipse</i> Randall, 2004		●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Amblyeleotris fasciata</i> (Herre, 1953)		●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Amblyeleotris guttata</i> (Fowler, 1938)		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Amblyeleotris periophthalma</i> (Bleeker, 1853)			●				1	?		 © Mike Neumann 2014




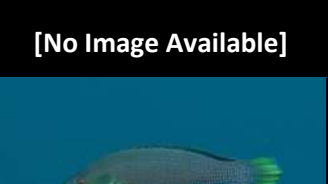


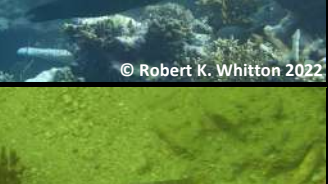
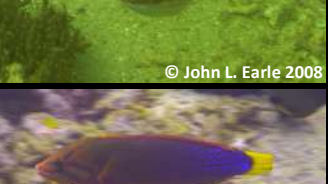

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Amblyeleotris randalli</i> Hoese & Steene, 1978		●		●			2-10	?		 © Robert K. Whitton 2008
<i>Amblyeleotris wheeleri</i> (Polunin & Lubbock, 1977)			●	●	●		2-10	1	-1	 © Robert K. Whitton 2009
<i>Amblyeleotris yanoi</i> Aonuma & Yoshino, 1996		●	●	●			2-10	?		 © Robert K. Whitton 2010
<i>Bryaninops yongei</i> (Davis & Cohen, 1969)		●	●				2-10	?		 © Robert K. Whitton 2009
<i>Callogobius sclateri</i> (Steindachner, 1879)			●				1	?		 © Robert K. Whitton 2009
<i>Coryphopterus duospilus</i> (Hoese & Reader, 1985)			●	●			2-10	?		 © Robert K. Whitton 2009
<i>Coryphopterus signipinnis</i> (Hoese & Obika, 1988)	●						2-10	?		[No Image Available]
<i>Discordipinna griessingeri</i> Hoese & Fourmanoir, 1978			●				1	?		[No Image Available]
<i>Eviota cometa</i> Jewett & Lachner, 1983				●			2-10	?		 © Robert K. Whitton 2010
<i>Eviota guttata</i> Lachner & Karnella, 1978		●	●	●			11-100	?		 © Robert K. Whitton 2009










Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Fusigobius melacron</i> (Randall, 2001)		●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Gnatholepis cauerensis</i> (Bleeker, 1853)			●				2-10	?		 © Robert K. Whitton 2009
<i>Gobiodon quinquestrigatus</i> (Valenciennes in Cuvier & Valenciennes, 1837)		●	●				2-10	?		 © Robert K. Whitton 2009
<i>Koumansetta rainfordi</i> Whitley, 1940				●			1	?		 © Robert K. Whitton 2010
<i>Lotilia graciliosa</i> Klausewitz, 1960						●	None	None		 © Mike Neumann 2009
<i>Paragobiodon lacunicolus</i> (Kendall & Goldsborough, 1911)						●	None	None		[No Image Available]
<i>Pleurosicya micheli</i> Fourmanoir, 1971		●		●			1	?		 © Robert K. Whitton 2010
<i>Priolepis cinctus</i> (Regan, 1908)			●				1	?		 © Robert K. Whitton 2009
<i>Stonogobiops xanthorhinica</i> Hoese & Randall, 1982		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Stonogobiops yasha</i> Yoshino & Shimada, 2001		●		●			1	?		 © Robert K. Whitton 2010






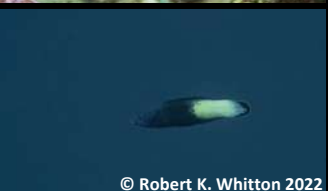
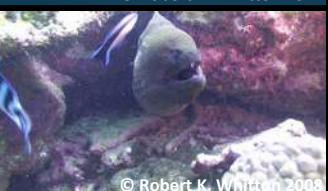


Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Trimma annosum</i> Winterbottom, 2003		●	●				1	?		 © Robert K. Whitton 2009
<i>Trimma caesiura</i> Jordan & Seale, 1906		●		●			2-10	?		 © Robert K. Whitton 2008
<i>Trimma naudei</i> Smith, 1957			●				?	?		 © Robert K. Whitton 2009
<i>Valenciennea puellaris</i> (Tomiyama in Tomiyama & Abe, 1956)		●	●	●			2-10	?		 © Robert K. Whitton 2008
<i>Valenciennea strigata</i> (Broussonet, 1782)			●	●			2-10	?		 © John L. Earle 2010
Family: Microdesmidae										
<i>Gunnellichthys curiosus</i> Dawson, 1968		●	●	●			2-10	?		 © John L. Earle 2009
<i>Nemateleotris decora</i> Randall & Allen, 1973		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Nemateleotris magnifica</i> Fowler, 1938	●	●		●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Ptereleotris evides</i> (Jordan & Hubbs, 1925)	●	●	●	●	●		11-100	2-10	-1	 © Robert K. Whitton 2022




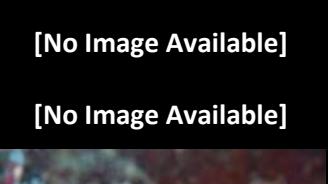




Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Ptereleotris grammica</i> Randall & Lubbock, 1982				●			1	?		 © Robert K. Whitton 2010
<i>Ptereleotris hanae</i> (Jordan & Snyder, 1901)		●					2-10	?		 © Robert K. Whitton 2008
<i>Ptereleotris heteroptera</i> (Bleeker, 1855)		●	●	●			1	?		 © John L. Earle 2010
Suborder: Labroidei										
Family: Labridae										
<i>Anampses caeruleopunctatus</i> Rüppell in Rüppell, 1829	●	●			●		2-10	2-10		 © John L. Earle 2008
<i>Anampses geographicus</i> Valenciennes in Cuvier & Valenciennes, 1840	●	●		●	●		1	2-10	1	 © John L. Earle 2010
<i>Anampses melanurus</i> Bleeker, 1857				●	●		1	2-10	1	 © John L. Earle 2010
<i>Anampses meleagrides</i> Valenciennes in Cuvier & Valenciennes, 1840		●			●		1	1		 © John L. Earle 2008
<i>Anampses neoguinaicus</i> Bleeker, 1878	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Anampses twistii</i> Bleeker, 1856	●	●			●		2-10	2-10		 © John L. Earle 2008

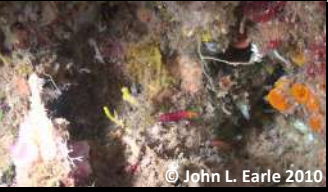








Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Bodianus anthioides</i> (Bennett, 1832)	●	●	●	●	●		1	2-10	1	 © Robert K. Whitton 2022
<i>Bodianus axillaris</i> (Bennett, 1832)	●	●	●	●	●		2-10	2-10		 © John L. Earle 2009
<i>Bodianus bimaculatus</i> Allen, 1973				●			1	?		[No Image Available]
<i>Bodianus dictynna</i> Gomon, 2006	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Bodianus loxozonus</i> (Snyder, 1908)	●	●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2009
<i>Bodianus mesothorax</i> (Bloch & Schneider, 1801)		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Cheilinus chlorourus</i> (Bloch, 1791)	●	●		●	●		2-10	2-10		 © John L. Earle 2008
<i>Cheilinus fasciatus</i> (Bloch, 1791)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Cheilinus oxycephalus</i> Bleeker, 1853		●	●		●		11-100	2-10	-1	 © John L. Earle 2009
<i>Cheilinus trilobatus</i> Lacépède in Lacépède, 1801	●	●		●	●		2-10	2-10		 © John L. Earle 2010






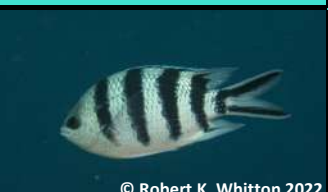
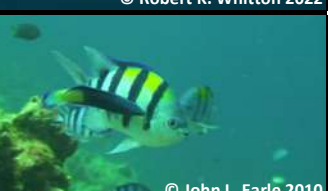

Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Cheilinus undulatus</i> Rüppell, 1835-1838	●	●					2-10	?		 © John L. Earle 2008
<i>Cheilio inermis</i> (Forsskål, 1775)					●		?	2-10		 © Robert K. Whitton 2022
<i>Choerodon jordani</i> (Snyder, 1908)				●	●		2-10	2-10		 © Robert K. Whitton 2010
<i>Cirrhilabrus exquisitus</i> Smith, 1957	●	●					1	?		[No Image Available]
<i>Cirrhilabrus punctatus</i> Randall & Kuitert, 1989	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Cirrhilabrus rubrimarginatus</i> Randall, 1992		●	●		●		2-10	101-1000	2	 © Robert K. Whitton 2022
<i>Coris aygula</i> Lacépède, 1801			●		●		1	2-10	1	 © Robert K. Whitton 2022
<i>Coris dorsomacula</i> Fowler in Fowler, 1908	●	●					1	?		 © John L. Earle 2008
<i>Coris gaimard</i> (Quoy & Gaimard, 1824)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2010
<i>Epibulus insidiator</i> (Pallas, 1770)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022










Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Gomphosus varius</i> Lacépède, 1801	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Halichoeres biocellatus</i> Schultz in Schultz, Chapman, Lachner & Woods, 1960	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Halichoeres claudia</i> Randall & Rocha, 2009	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Halichoeres hartzfeldii</i> (Bleeker, 1852)				●	●		2-10	2-10		 © John L. Earle 2010
<i>Halichoeres hortulanus</i> (Lacépède, 1801)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Halichoeres marginatus</i> Rüppell in Rüppell, 1835	●	●					1	?		 © Robert K. Whitton 2008
<i>Halichoeres prosopeion</i> (Bleeker, 1853)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Halichoeres richmondi</i> Fowler & Bean, 1928					●		?	2-10		 © Robert K. Whitton 2022
<i>Hemigymnus fasciatus</i> (Bloch, 1792)	●	●			●		2-10	2-10		 © Robert K. Whitton 2008







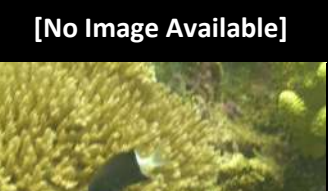


Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Hemigymnus melapterus</i> (Bloch, 1791)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Hologymnosus annulatus</i> (Lacépède, 1801)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Hologymnosus doliatus</i> (Lacépède in Lacépède, 1801)	●	●	●				1	?		 © Robert K. Whitton 2009
<i>Iniistius pavo</i> (Valenciennes in Cuvier & Valenciennes, 1840)		●					1	?		 © Robert K. Whitton 2008
<i>Labrichthys unilineatus</i> (Guichenot, 1847)			●		●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Labroides bicolor</i> Fowler & Bean, 1928	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Labroides dimidiatus</i> (Valenciennes in Cuvier & Valenciennes, 1839)	●	●			●		11-100	11-100		 © Robert K. Whitton 2009
<i>Labropsis australis</i> Randall, 1981		●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Labropsis xanthonota</i> Randall, 1981	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022








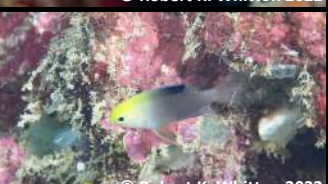
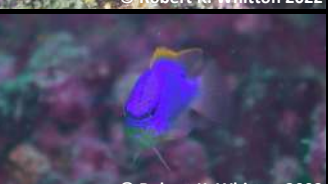
Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Macropharyngodon meleagris</i> (Valenciennes in Cuvier & Valenciennes, 1839)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2009
<i>Macropharyngodon negrosensis</i> Herre, 1932		●	●		●		2-10	2-10		 © John L. Earle 2009
<i>Novaculichthys taeniourus</i> (Lacépède in Lacépède, 1801)		●		●	●		2-10	11-100	1	 © John L. Earle 2010
<i>Oxycheilinus arenatus</i> (Valenciennes in Cuvier & Valenciennes, 1840)					●		?	1		[No Image Available]
<i>Oxycheilinus bimaculatus</i> (Valenciennes in Cuvier & Valenciennes, 1840)				●			2-10	?		[No Image Available]
<i>Oxycheilinus digramma</i> (Lacépède, 1801)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Oxycheilinus orientalis</i> (Günther in Günther, 1862)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Oxycheilinus unifasciatus</i> (Streets, 1877)			●				1	?		 © John L. Earle 2009
<i>Pseudocheilinus evanidus</i> Jordan & Evermann, 1903	●	●	●		●		11-100	2-10	-1	 © Robert K. Whitton 2009
<i>Pseudocheilinus hexataenia</i> (Bleeker, 1857)	●	●	●		●		11-100	2-10	-1	 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Pseudocheilinus ocellatus</i> Randall, 1999				●			1	?		 © John L. Earle 2010
<i>Pseudocheilinus octotaenia</i> Jenkins, 1901	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Pseudocoris yamashiroi</i> (Schmidt, 1931)				●			2-10	?		[No Image Available]
<i>Pseudodax moluccanus</i> (Valenciennes in Cuvier & Valenciennes, 1840)	●	●	●		●		2-10	1	-1	 © John L. Earle 2009
<i>Pteragogus cryptus</i> Randall, 1981	●	●		●	●		2-10	2-10		 © John L. Earle 2010
<i>Stethojulis bandanensis</i> (Bleeker, 1851)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Stethojulis trilineata</i> (Bloch & Schneider, 1801)		●					1	?		 © Robert K. Whitton 2008
<i>Thalassoma amblycephalum</i> (Bleeker, 1856)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Thalassoma hardwicke</i> (Bennett, 1830)	●	●			●		2-10	2-10		 © Robert K. Whitton 2008
<i>Thalassoma lunare</i> (Linnæus, 1758)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022



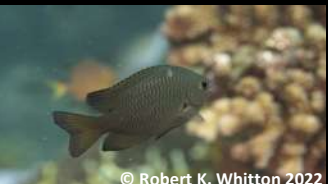




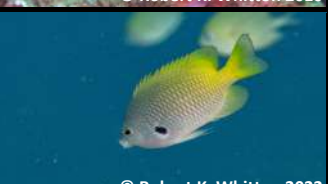
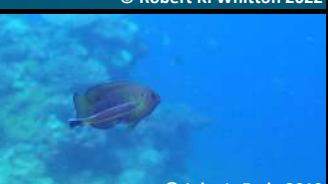
Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Thalassoma lutescens</i> (Lay, Bennett & Bennett in Lay & Bennett, 1839)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Thalassoma nigrofasciatum</i> Randall, 2003	●	●	●		●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Thalassoma purpureum</i> (Forsskål, 1775)		●					1	?		 © John L. Earle 2008
<i>Thalassoma quinquevittatum</i> (Lay & Bennett, 1839)	●	●	●		●		11-100	11-100		 © Robert K. Whitton 2022
<i>Thalassoma trilobatum</i> (Lacépède, 1801)					●		?	1		[No Image Available]
<i>Wetmorella nigropinnata</i> (Seale, 1901)		●			●		1	1		 © John L. Earle 2008
Family: Pomacentridae										
<i>Abudefduf sexfasciatus</i> (Lacépède, 1801)	●	●	●	●	●		101-1000	101-1000		 © Robert K. Whitton 2022
<i>Abudefduf vaigiensis</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)	●	●	●	●	●		11-100	11-100		 © John L. Earle 2010
<i>Amblyglyphidodon aureus</i> (Cuvier ex Kuhl & van Hasselt in Cuvier & Valenciennes, 1830)	●	●	●	●	●		2-10	101-1000	2	 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Amblyglyphidodon orbicularis</i> (Hombron & Jacquinot in Jacquinot & Guichenot, 1853)	●	●	●	●	●		2-10	2-10		 © John L. Earle 2008
<i>Amphiprion barberi</i> Allen, Drew & Kaufman, 2008	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Amphiprion chrysopterus</i> Cuvier in Cuvier & Valenciennes, 1830	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Amphiprion perideraion</i> Bleeker, 1855	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Chromis acares</i> Randall & Swerdloff, 1973			●				2-10	?		 © John L. Earle 2009
<i>Chromis alpha</i> Randall, 1988	●	●	●	●	●		2-10	11-100	1	 © John L. Earle 2008
<i>Chromis amboinensis</i> (Bleeker, 1871)	●	●	●	●	●		11-100	11-100		 © John L. Earle 2010
<i>Chromis analis</i> (Cuvier in Cuvier & Valenciennes, 1830)		●			●		2-10	2-10		 © Robert K. Whitton 2008
<i>Chromis atripectoralis</i> Welander & Schultz, 1951		●			●		2-10	11-100	1	 © Robert K. Whitton 2008










Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Chromis atripes</i> Fowler & Bean, 1928	●	●			●		101-1000	11-100	-1	 © Robert K. Whitton 2022
<i>Chromis chrysur</i> a (Bliss, 1883)	●	●	●	●	●		1	2-10	1	 © Robert K. Whitton 2022
<i>Chromis delta</i> Randall, 1988	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Chromis elerae</i> Fowler & Bean, 1928					●		?	2-10		 © Robert K. Whitton 2022
<i>Chromis iomelas</i> Jordan & Seale, 1906	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Chromis lepidolepis</i> Bleeker, 1877	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chromis leucura</i> Gilbert, 1905				●	●		2-10	2-10		[No Image Available]
<i>Chromis margaritifer</i> Fowler, 1946	●	●			●		11-100	2-10	-1	 © John L. Earle 2008
<i>Chromis retrofasciata</i> Weber, 1913			●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chromis ternatensis</i> (Bleeker, 1856)		●	●	●	●		2-10	2-10		 © John L. Earle 2009







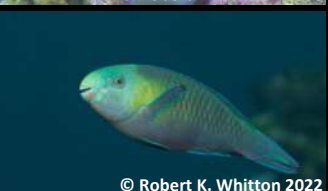


Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Chromis vanderbilti</i> (Fowler, 1941)		●			●		11-100	2-10	-1	 © Robert K. Whitton 2008
<i>Chromis viridis</i> (Cuvier in Cuvier & Valenciennes, 1830)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Chromis weberi</i> Fowler & Bean, 1928	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chromis xanthurus</i> (Bleeker, 1854)	●	●		●	●		2-10	2-10		 © John L. Earle 2010
<i>Chrysiptera brownriggii</i> (Bennett, 1828)	●	●	●				11-100	?		 © Robert K. Whitton 2009
<i>Chrysiptera caeruleolineata</i> (Allen, 1973)			●	●	●		2-10	2-10		 © Robert K. Whitton 2010
<i>Chrysiptera rollandi</i> (Whitley, 1961)	●	●	●	●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Chrysiptera talboti</i> (Allen, 1975)					●		?	1		 © Robert K. Whitton 2022
<i>Chrysiptera taupou</i> (Jordan & Seale, 1906)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2009








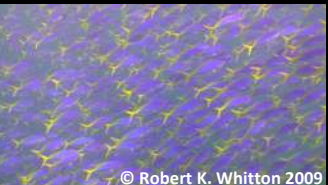
Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Chrysiptera tricineta</i> (Allen & Randall, 1974)		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Dascyllus aruanus</i> (Linnæus, 1758)			●		●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Dascyllus reticulatus</i> (Richardson, 1846)	●	●	●		●		11-100	11-100		 © Robert K. Whitton 2009
<i>Dascyllus trimaculatus</i> (Rüppell in Rüppell, 1829)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Lepidozygus tapeinosoma</i> (Bleeker, 1856)				●			?	?		[No Image Available]
<i>Neoglyphidodon carlsoni</i> (Allen, 1975)		●		●			1	?		 © John L. Earle 2010
<i>Neopomacentrus filamentosus</i> (MacLeay, 1882)		●	●				?	?		 © Robert K. Whitton 2009
<i>Neopomacentrus metallicus</i> (Jordan & Seale, 1906)	●						2-10	?		[No Image Available]
<i>Plectroglyphidodon dickii</i> (Liénard, 1839)	●	●	●	●	●		11-100	2-10	-1	 © Robert K. Whitton 2008
<i>Plectroglyphidodon johnstonianus</i> Fowler & Ball, 1924	●	●			●		2-10	2-10		 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Plectroglyphidodon lacrymatus</i> (Quoy & Gaimard, 1825)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2009
<i>Plectroglyphidodon leucozonus</i> (Bleeker, 1859)		●			●		11-100	11-100		 © John L. Earle 2008
<i>Pomacentrus brachialis</i> Cuvier in Cuvier & Valenciennes, 1830	●	●			●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pomacentrus callainus</i> Randall, 2002	●	●	●	●	●		11-100	2-10	-1	 © John L. Earle 2009
<i>Pomacentrus coelestis</i> Jordan & Starks, 1901	●	●	●		●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pomacentrus flavioculus</i> Allen, Erdmann & Pertiwi, 2017	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Pomacentrus moluccensis</i> Bleeker, 1853		●	●	●			1	?		 © Robert K. Whitton 2010
<i>Pomacentrus nigromarginatus</i> Allen, 1973	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pomacentrus spilotoceps</i> Randall, 2002	●	●	●	●			2-10	?		 © John L. Earle 2010








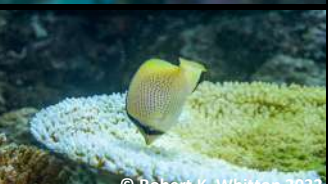
Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Pomacentrus vaiuli</i> Jordan & Seale, 1906	●	●	●		●		11-100	11-100		 © John L. Earle 2009
<i>Pomachromis richardsoni</i> (Snyder, 1909)			●	●			2-10	?		 © John L. Earle 2009
<i>Stegastes fasciolatus</i> (Ogilby, 1889)	●	●	●		●		2-10	11-100	1	 © John L. Earle 2009
<i>Stegastes nigricans</i> (Lacépède, 1802)					●		1	11-100	2	[No Image Available]
Family: Scaridae										
<i>Calotomus carolinus</i> (Valenciennes in Cuvier & Valenciennes, 1840)		●					2-10	?		 © John L. Earle 2008
<i>Cetoscarus bicolor</i> (Rüppell, 1828-1830)		●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Cetoscarus ocellatus</i> (Valenciennes in Cuvier & Valenciennes, 1840)	●				●		?	2-10		[No Image Available]
<i>Chlorurus bleekeri</i> (de Beaufort, 1940)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Chlorurus japanensis</i> (Bloch, 1789)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chlorurus microrhinos</i> (Bleeker, 1854)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022




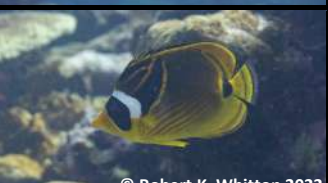





Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Chlorurus sordidus</i> (Forsskål, 1775)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Hipposcarus longiceps</i> (Valenciennes in Cuvier & Valenciennes, 1840)	●	●			●		2-10	2-10		 © John L. Earle 2008
<i>Scarus altipinnis</i> (Steindachner, 1879)	●	●	●		●		11-100	11-100		 © John L. Earle 2009
<i>Scarus chameleon</i> Choat & Randall, 1986	●	●	●		●		2-10	2-10		 © John L. Earle 2008
<i>Scarus forsteni</i> (Bleeker, 1861)		●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Scarus frenatus</i> Lacépède, 1802	●	●	●	●	●		2-10	2-10		 © John L. Earle 2010
<i>Scarus fuscocaudalis</i> Randall & Myers, 2000				●	●		?	2-10		 © John L. Earle 2010
<i>Scarus ghobban</i> Forsskål, 1775	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Scarus globiceps</i> Valenciennes in Cuvier & Valenciennes, 1840		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2009
<i>Scarus longipinnis</i> Randall & Choat, 1980						●	None	None		[No Image Available]










Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Scarus niger</i> Forsskål, 1775	●	●	●	●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Scarus oviceps</i> Valenciennes in Cuvier & Valenciennes, 1840		●		●	●		2-10	2-10		 © John L. Earle 2008
<i>Scarus psittacus</i> Forsskål, 1775	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Scarus rivulatus</i> Valenciennes in Cuvier & Valenciennes, 1840	●	●	●	●	●		2-10	1	-1	 © John L. Earle 2009
<i>Scarus rubroviolaceus</i> Bleeker, 1847	●	●	●	●	●		2-10	2-10		 © John L. Earle 2010
<i>Scarus schlegeli</i> (Bleeker, 1861)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Scarus spinus</i> (Kner, 1868)	●	●		●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
Suborder: Percoidei										
Family: Apogonidae										
<i>Apogon fraenatus</i> Valenciennes, 1832			●	●			2-10	?		 © John L. Earle 2010
<i>Cheilodipterus artus</i> Smith, 1961			●				1	?		 © John L. Earle 2009








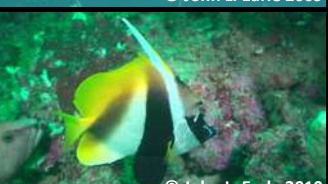

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Cheilodipterus macrodon</i> (Lacépède, 1802)		●		●	●		2-10	1	-1	 © Robert K. Whitton 2008
<i>Cheilodipterus quinquelineatus</i> Cuvier in Cuvier & Valenciennes, 1828		●		●			1	?		 © John L. Earle 2010
<i>Ostorhinchus angustatus</i> (Smith & Radcliffe in Radcliffe, 1911)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Ostorhinchus bandanensis</i> (Bleeker, 1854)			●				1	?		 © John L. Earle 2009
<i>Ostorhinchus cyanosoma</i> (Bleeker, 1853)	●						1	?		[No Image Available]
<i>Ostorhinchus nigrofasciatus</i> (Lachner, 1953)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2009
<i>Pristiapogon kallopterus</i> (Bleeker, 1856)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Zapogon evermanni</i> (Jordan & Snyder, 1904)				●			?	?		[No Image Available]
Family: Caesionidae										
<i>Caesio caerulea</i> Lacépède in Lacépède, 1801	●	●		●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Caesio lunaris</i> Cuvier in Cuvier & Valenciennes, 1830					●		?	11-100		[No Image Available]
<i>Caesio teres</i> Seale, 1906	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2009

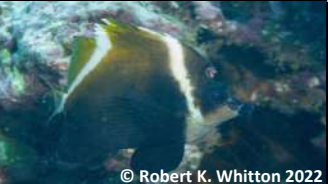



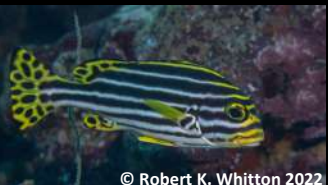


Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Pterocaesio marri</i> Schultz in Schultz, Herald, Lachner, Welander & Woods, 1953	●	●		●	●		2-10	1	-1	 © John L. Earle 2010
<i>Pterocaesio pisang</i> (Bleeker, 1853)	●	●			●		101-1000	11-100	-1	 © John L. Earle 2008
<i>Pterocaesio tile</i> (Cuvier in Cuvier & Valenciennes, 1830)					●		?	11-100		[No Image Available]
<i>Pterocaesio trilineata</i> Carpenter, 1987	●	●	●		●		101-1000	11-100	-1	 © John L. Earle 2009
Family: Carangidae										
<i>Carangoides ferdau</i> (Forsskål, 1775)			●				2-10	?		 © Robert K. Whitton 2009
<i>Carangoides plagiotaenia</i> Bleeker, 1857				●	●		1	1		 © Robert K. Whitton 2022
<i>Caranx ignobilis</i> (Forsskål, 1775)	●	●	●	●	●		11-100	1	-2	 © Robert K. Whitton 2022
<i>Caranx melampygus</i> Cuvier in Cuvier & Valenciennes, 1833	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Caranx sexfasciatus</i> Quoy & Gaimard in Quoy & Gaimard, 1825	●	●		●			2-10	?		 © John L. Earle 2010




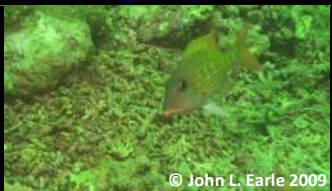
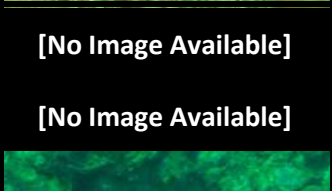



Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Decapterus macarellus</i> (Cuvier in Cuvier & Valenciennes, 1833)					●		?	2-10		 © Robert K. Whitton 2022
<i>Elagatis bipinnulata</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)	●	●			●		2-10	2-10		 © Robert K. Whitton 2008
<i>Gnathanodon speciosus</i> (Forsskål, 1775)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Pseudocaranx dentex</i> (Bloch & Schneider, 1801)						●	None	None		 © Lill Haugen 2009
<i>Scomberoides lysan</i> (Forsskål, 1775)		●			●		1	1		[No Image Available]
<i>Scomberoides tol</i> (Cuvier in Cuvier & Valenciennes, 1832)		●					1	?		[No Image Available]
Family: Chaetodontidae										
<i>Chaetodon auriga</i> Forsskål, 1775	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon baronessa</i> Cuvier, 1829	●	●			●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Chaetodon bennetti</i> Cuvier in Cuvier & Valenciennes, 1831	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon citrinellus</i> Cuvier in Cuvier & Valenciennes, 1831	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Chaetodon ephippium</i> Cuvier in Cuvier & Valenciennes, 1831	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon kleinii</i> Bloch, 1790	●	●	●	●	●		11-100	101-1000	1	 © Robert K. Whitton 2022
<i>Chaetodon lineolatus</i> Cuvier ex Quoy & Gaimard in Cuvier & Valenciennes, 1831		●			●		1	1		 © Robert K. Whitton 2008
<i>Chaetodon lunula</i> (Lacépède in Lacépède, 1802)		●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon lunulatus</i> Quoy & Gaimard in Quoy & Gaimard, 1825	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon melannotus</i> Bloch & Schneider, 1801		●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon mertensii</i> Cuvier in Cuvier & Valenciennes, 1831	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon ornatissimus</i> Cuvier in Cuvier & Valenciennes, 1831		●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon oxycephalus</i> Bleeker, 1853		●			●		1	2-10	1	 © Robert K. Whitton 2022






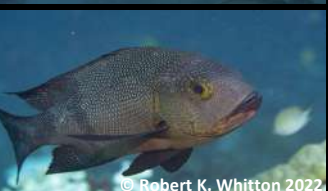



Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Chaetodon pelewensis</i> Kner, 1868	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2009
<i>Chaetodon plebeius</i> Cuvier in Cuvier & Valenciennes, 1831	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon punctatofasciatus</i> Cuvier in Cuvier & Valenciennes, 1831			●				?	?		 © John L. Earle 2009
<i>Chaetodon rafflesii</i> Anonymous & Bennett, 1830	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon reticulatus</i> Cuvier & Valenciennes, 1831	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon semeion</i> Bleeker, 1855			●		●		1	1		 © Robert K. Whitton 2022
<i>Chaetodon trifascialis</i> Quoy & Gaimard, 1824-1826		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2008
<i>Chaetodon ulietensis</i> Cuvier in Cuvier & Valenciennes, 1831	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Chaetodon unimaculatus</i> Bloch, 1787	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022










Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Chaetodon vagabundus</i> Linnaeus, 1758	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Forcipiger flavissimus</i> Jordan & McGregor in Jordan & Evermann, 1898		●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Forcipiger longirostris</i> (Broussonet, 1782)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Hemitaurichthys polylepis</i> (Bleeker, 1857)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Heniochus acuminatus</i> (Linnæus, 1758)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Heniochus chrysostomus</i> Cuvier in Cuvier & Valenciennes, 1831	●	●	●	●	●		11-100	2-10	-1	 © John L. Earle 2008
<i>Heniochus diphreutes</i> Jordan, 1903	●		●		●		11-100	11-100		 © John L. Earle 2009
<i>Heniochus monoceros</i> Cuvier & Valenciennes, 1831		●		●	●		2-10	2-10		 © John L. Earle 2010
<i>Heniochus singularius</i> Smith & Radcliffe, 1911	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022







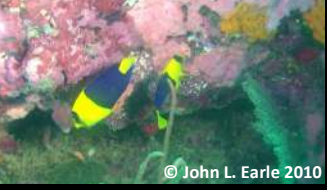
Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Heniochus varius</i> (Cuvier, 1829)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Echeneidae										
<i>Echeneis naucrates</i> Linnaeus, 1758	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Remora remora</i> (Linnaeus, 1758)	●						None	?		[No Image Available]
Family: Haemulidae										
<i>Plectorhinchus chaetodonoides</i> Lacépède, 1801	●	●		●	●		1	1		 © John L. Earle 2010
<i>Plectorhinchus picus</i> (Cuvier in Cuvier & Valenciennes, 1830)	●	●	●	●			1	?		 © John L. Earle 2010
<i>Plectorhinchus vittatus</i> (Linnaeus, 1758)	●	●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
Family: Kyphosidae										
<i>Kyphosus cinerascens</i> (Forsskål, 1775)	●	●	●		●		2-10	1	-1	 © John L. Earle 2009
<i>Kyphosus vaigiensis</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)		●					2-10	?		[No Image Available]
Family: Lethrinidae										
<i>Gnathodentex aureolineatus</i> (Lacépède in Lacépède, 1802)			●		●		11-100	11-100		 © Robert K. Whitton 2022








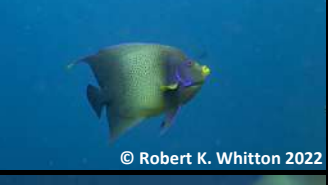

Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Gymnocranius microdon</i> (Bleeker, 1851)				●			2-10	?		 © John L. Earle 2010
<i>Gymnocranius superciliosus</i> Borsa, Béarez, Pajo & Chen, 2013					●		?	1		 © Robert K. Whitton 2022
<i>Lethrinus atkinsoni</i> Seale, 1910	●	●		●			2-10	?		 © Robert K. Whitton 2008
<i>Lethrinus erythracanthus</i> Valenciennes in Cuvier & Valenciennes, 1830	●	●	●	●	●		1	1		 © John L. Earle 2009
<i>Lethrinus genivittatus</i> Valenciennes in Cuvier & Valenciennes, 1830					●		?	1		[No Image Available]
<i>Lethrinus harak</i> (Forsskål, 1775)				●			?	?		[No Image Available]
<i>Lethrinus obsoletus</i> (Forsskål, 1775)				●			1	?		 © John L. Earle 2010
<i>Lethrinus olivaceus</i> Valenciennes in Cuvier & Valenciennes, 1830	●	●					2-10	?		 © Robert K. Whitton 2008
<i>Lethrinus xanthochilus</i> Klunzinger, 1870	●	●	●	●			2-10	?		 © John L. Earle 2010
<i>Monotaxis grandoculis</i> (Forsskål, 1775)	●	●	●		●		11-100	2-10	-1	 © Robert K. Whitton 2009










Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Monotaxis heterodon</i> (Bleeker, 1854)		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Lutjanidae										
<i>Aphareus furca</i> (Lacépède in Lacépède, 1801)	●	●	●	●			1	?		 © Robert K. Whitton 2010
<i>Aphareus rutilans</i> Cuvier in Cuvier & Valenciennes, 1830				●			2-10	?		[No Image Available]
<i>Aprion virescens</i> Valenciennes in Cuvier & Valenciennes, 1830						●	None	None		[No Image Available]
<i>Lutjanus biguttatus</i> (Valenciennes in Cuvier & Valenciennes, 1830)		●		●	●		2-10	2-10		 © John L. Earle 2010
<i>Lutjanus bohar</i> (Forsskål, 1775)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Lutjanus ehrenbergii</i> (Peters, 1869)		●					2-10	?		 © Robert K. Whitton 2008
<i>Lutjanus fulviflamma</i> (Forsskål, 1775)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Lutjanus fulvus</i> (Forster in Bloch & Schneider, 1801)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Lutjanus gibbus</i> (Forsskål, 1775)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022





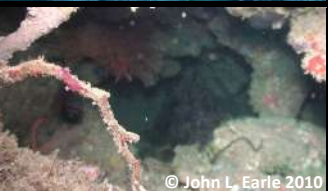




Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Lutjanus kasmira</i> (Forsskål, 1775)	●	●		●	●		1	11-100	2	 © Robert K. Whitton 2022
<i>Lutjanus monostigma</i> (Cuvier in Cuvier & Valenciennes, 1828)	●	●		●	●		1	2-10	1	 © John L. Earle 2008
<i>Lutjanus rivulatus</i> (Cuvier & Valenciennes, 1828)	●	●		●			2-10	?		 © John L. Earle 2010
<i>Lutjanus rufolineatus</i> (Valenciennes in Cuvier & Valenciennes, 1830)		●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Lutjanus semicinctus</i> Quoy & Gaimard, 1824	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Macolor macularis</i> Fowler, 1931		●		●	●		1	2-10	1	 © Robert K. Whitton 2022
<i>Macolor niger</i> (Forsskål, 1775)	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Pinjalo lewisi</i> Randall, Allen & Anderson, 1987					●		?	11-100		 © Robert K. Whitton 2022
<i>Symphorus nematophorus</i> (Bleeker, 1860)				●	●		1	1		 © Robert K. Whitton 2010
Family: Malacanthidae										









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Hoplolatilus cuniculus</i> Randall & Dooley, 1974				●	●		1	2-10	1	 © Robert K. Whitton 2010
<i>Hoplolatilus marcosi</i> Burgess, 1978					●		?	2-10		[No Image Available]
<i>Hoplolatilus starcki</i> Randall & Dooley, 1974			●	●	●		2-10	11-100	1	 © John L. Earle 2009
<i>Malacanthus brevirostris</i> Guichenot, 1848			●	●	●		2-10	2-10		 © Robert K. Whitton 2010
Family: Mullidae										
<i>Mulloidichthys vanicolensis</i> (Valenciennes in Cuvier & Valenciennes, 1831)					●		?	2-10		 © Robert K. Whitton 2022
<i>Parupeneus barberinus</i> (Lacépède in Lacépède, 1801)	●	●		●	●		1	2-10	1	 © Robert K. Whitton 2022
<i>Parupeneus ciliatus</i> (Lacépède, 1802)			●	●	●		1	1		 © Robert K. Whitton 2022
<i>Parupeneus crassilabris</i> (Valenciennes in Cuvier & Valenciennes, 1831)	●	●			●		2-10	2-10		 © Robert K. Whitton 2022
<i>Parupeneus cyclostomus</i> (Lacépède in Lacépède, 1801)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Parupeneus multifasciatus</i> (Quoy & Gaimard in Quoy & Gaimard, 1825)	●	●		●	●		2-10	2-10		 © Robert K. Whitton 2022









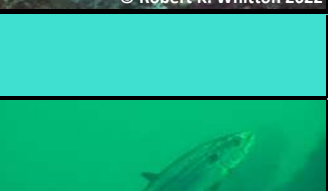
Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Parupeneus pleurostigma</i> (Bennett, 1831)	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
Family: Nemipteridae										
<i>Pentapodus aureofasciatus</i> Russell, 2001		●		●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Scolopsis bilineata</i> (Bloch, 1793)	●	●	●	●	●		11-100	1	-2	 © John L. Earle 2009
Family: Pempheridae										
<i>Pempheris oualensis</i> Cuvier in Cuvier & Valenciennes, 1831	●						?	?		[No Image Available]
<i>Pempheris schwenkii</i> Bleeker, 1855	●	●					2-10	?		[No Image Available]
<i>Pempheris vanicolensis</i> Cuvier in Cuvier & Valenciennes, 1831		●	●	●	●		11-100	101-1000	1	 © Robert K. Whitton 2022
Family: Plesiopidae										
<i>Callopsiops altivelis</i> (Steindachner, 1903)				●			1	?		 © John L. Earle 2010
<i>Steeneichthys plesiopsus</i> Allen & Randall, 1985						●	None	None		[No Image Available]
Family: Pomacanthidae										
<i>Apolemichthys trimaculatus</i> (Cuvier in Cuvier & Valenciennes, 1831)		●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Centropyge bicolor</i> (Bloch, 1787)	●	●		●	●		11-100	11-100		 © John L. Earle 2010








Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Centropyge bispinosa</i> (Günther, 1860)	●	●		●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Centropyge fisheri</i> (Snyder, 1904)		●					1	?		 © John L. Earle 2008
<i>Centropyge flavissima</i> (Cuvier in Cuvier & Valenciennes, 1831)	●	●	●		●		11-100	11-100		 © Robert K. Whitton 2022
<i>Centropyge heraldi</i> Woods & Schultz, 1953				●			2-10	?		 © John L. Earle 2010
<i>Genicanthus melanospilos</i> (Bleeker, 1857)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Genicanthus watanabei</i> (Yasuda & Tominaga, 1970)				●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pomacanthus imperator</i> (Bloch, 1787)	●	●			●		1	1		 © Mike Neumann 2011
<i>Pomacanthus semicirculatus</i> (Cuvier in Cuvier & Valenciennes, 1831)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Pygoplites diacanthus</i> (Boddaert, 1772)	●	●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
Family: Priacanthidae										









Scientific Name	2004	2008	2009	2010	2022	Other	Pre- COVID Abnd.	Post- COVID Abnd.	Change	
<i>Priacanthus hamrur</i> (Forsskål, 1775)			●		●		1	1		 © Robert K. Whitton 2022
Family: Pseudochromidae										
<i>Cypho purpurascens</i> (De Vis, 1884)			●	●			2-10	?		 © Robert K. Whitton 2009
<i>Pictichromis porphyreus</i> (Lubbock & Goldman, 1974)		●	●	●	●		2-10	2-10		 © John L. Earle 2009
<i>Pseudoplesiops wassi</i> Gill & Edwards, 2003		●					1	?		 © Robert K. Whitton 2008
Family: Serranidae										
<i>Anyperodon leucogrammicus</i> (Valenciennes in Cuvier & Valenciennes, 1828)	●	●			●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Belonoperca chabanaudi</i> Fowler & Bean, 1930	●	●		●	●		1	1		 © Robert K. Whitton 2022
<i>Cephalopholis argus</i> Bloch & Schneider, 1801	●	●		●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Cephalopholis leopardus</i> (Lacépède, 1801)	●	●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Cephalopholis miniata</i> (Forsskål, 1775)				●	●		?	1		 © Robert K. Whitton 2022









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Cephalopholis spiloparaea</i> (Valenciennes in Cuvier & Valenciennes, 1828)	●	●	●	●	●		2-10	2-10		 © John L. Earle 2010
<i>Cephalopholis urodeta</i> (Forster in Bloch & Schneider, 1801)	●	●	●	●	●		11-100	2-10	-1	 © John L. Earle 2010
<i>Epinephelus coeruleopunctatus</i> (Bloch, 1790)				●	●		1	1		 © Robert K. Whitton 2021
<i>Epinephelus cyanopodus</i> (Richardson, 1846)						●	None	None		 © Mike Neumann 2011
<i>Epinephelus fuscoguttatus</i> (Forsskål, 1775)	●	●		●			1	?		 © John L. Earle 2010
<i>Epinephelus hexagonatus</i> (Forster in Bloch & Schneider, 1801)		●					2-10	?		 © Robert K. Whitton 2008
<i>Epinephelus howlandi</i> (Günther, 1873)		●			●		1	1		 © Robert K. Whitton 2008
<i>Epinephelus lanceolatus</i> (Bloch, 1790)	●	●					1	?		 © Robert K. Whitton 2008
<i>Epinephelus macrospilos</i> (Bleeker, 1855)	●	●					1	?		 © John L. Earle 2008



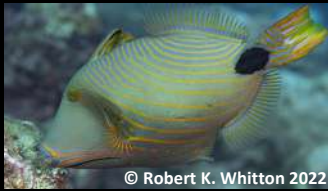





Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Epinephelus maculatus</i> (Bloch, 1790)	●	●	●	●			2-10	?		 © John L. Earle 2009
<i>Epinephelus malabaricus</i> (Bloch & Schneider, 1801)			●	●			1	?		 © John L. Earle 2010
<i>Epinephelus merra</i> Bloch, 1793		●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
<i>Epinephelus polyphekadion</i> (Bleeker, 1849)	●	●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Epinephelus spilotoceps</i> Schultz in Schultz, Herald, Lachner, Welander & Woods, 1953					●		?	1		[No Image Available]
<i>Liopropoma susumi</i> (Jordan & Seale, 1906)				●			1	?		[No Image Available]
<i>Plectropomus laevis</i> (Lacépède, 1801)		●	●	●			2-10	?		 © John L. Earle 2009
<i>Plectropomus leopardus</i> (Lacépède, 1802)	●	●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Pseudanthias carlsoni</i> Randall & Pyle, 2001			●	●	●		11-100	101-1000	1	 © Robert K. Whitton 2022
<i>Pseudanthias cooperi</i> (Regan, 1902)					●		?	2-10		[No Image Available]
<i>Pseudanthias flavicauda</i> Randall & Pyle, 2001					●		?	2-10		[No Image Available]
<i>Pseudanthias hypselosoma</i> Bleeker, 1878		●			●		11-100	2-10	-1	 © Robert K. Whitton 2008

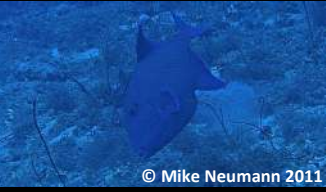








Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Pseudanthias lori</i> (Lubbock & Randall in Fourmanoir & Laboute, 1976)				●			?	?		 © Robert K. Whitton 2010
<i>Pseudanthias pascalus</i> (Jordan & Tanaka, 1927)	●	●					2-10	?		 © Robert K. Whitton 2008
<i>Pseudanthias pleurotaenia</i> (Bleeker, 1857)		●		●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pseudanthias squamipinnis</i> (Peters, 1855)	●	●			●		11-100	11-100		 © Robert K. Whitton 2022
<i>Pseudogramma polyacanthum</i> (Bleeker, 1856)			●				1	?		 © Robert K. Whitton 2009
<i>Serranocirrhites latus</i> Watanabe, 1949	●	●		●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Variola albimarginata</i> Baissac, 1953	●	●	●	●			1	?		 © John L. Earle 2008
<i>Variola louti</i> (Forsskål, 1775)	●	●	●	●	●		2-10	1	-1	 © Robert K. Whitton 2022
Suborder: Scombroidei										
Family: Scombridae										
<i>Gymnosarda unicolor</i> [Rüppell, 1835-1838]		●		●			1	?		 © Robert K. Whitton 2010









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Rastrelliger kanagurta</i> (Cuvier, 1816)		●	●	●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Scomberomorus commerson</i> (Lacépède in Lacépède, 1800)					●		?	1		 © Robert K. Whitton 2022
Family: Sphyraenidae										
<i>Sphyraena barracuda</i> (Edwards in Catesby, 1771)				●	●		1	1		[No Image Available]
<i>Sphyraena jello</i> Cuvier in Cuvier & Valenciennes, 1829		●		●			11-100	?		 © Robert K. Whitton 2010
Suborder: Trachinoidei										
Family: Pinguipedidae										
<i>Parapercis clathrata</i> Ogilby, 1910	●	●	●		●		2-10	2-10		 © Robert K. Whitton 2022
<i>Parapercis hexophtalma</i> (Cuvier in Cuvier & Valenciennes, 1829)		●		●			1	?		 © Robert K. Whitton 2008
<i>Parapercis millepunctata</i> (Günther, 1860)					●		?	1		[No Image Available]
<i>Parapercis multiplicata</i> Randall, 1984		●					1	?		 © Robert K. Whitton 2008
<i>Parapercis schauinslandii</i> (Steindachner, 1900)		●					2-10	?		 © Robert K. Whitton 2008
Family: Trichonotidae										









Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Trichonotus setiger</i> Bloch & Schneider, 1801		●					1	?		 © John L. Earle 2008
Order: Pleuronectiformes										
Suborder: Pleuronectoidei										
Family: Bothidae										
<i>Bothus mancus</i> (Broussonet, 1782)			●				1	?		 © John L. Earle 2009
<i>Bothus pantherinus</i> (Rüppell in Rüppell, 1830)						●	None	None		 © Mike Neumann 2012
Order: Scorpaeniformes										
Suborder: Scorpaenoidei										
Family: Caracanthidae										
<i>Caracanthus maculatus</i> (Gray, 1831)	●	●			●		2-10	1	-1	 © Robert K. Whitton 2008
Family: Scorpaenidae										
<i>Dendrochirus brachypterus</i> (Cuvier in Cuvier & Valenciennes, 1829)						●	None	None		 © Mike Neumann 2013
<i>Parascorpaena mcadamsi</i> (Fowler, 1938)			●				1	?		 © Robert K. Whitton 2009
<i>Pterois antennata</i> (Bloch, 1787)			●	●	●		None	2-10	2	 © John L. Earle 2009
<i>Pterois radiata</i> Cuvier in Cuvier & Valenciennes, 1829	●		●				None	?		 © John L. Earle 2009

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Pterois volitans</i> (Linnæus, 1758)	●		●	●			None	?		 © Robert K. Whitton 2010
<i>Scorpaenodes albaiensis</i> (Evermann & Seale, 1907)			●				1	?		 © Robert K. Whitton 2009
<i>Scorpaenopsis diabolus</i> (Cuvier, 1829)		●	●				2-10	?		 © Robert K. Whitton 2009
<i>Scorpaenopsis possi</i> Randall & Eschmeyer, 2001			●	●			1	?		 © Robert K. Whitton 2010
<i>Sebastapistes cyanostigma</i> (Bleeker, 1856)		●					11-100	?		 © Robert K. Whitton 2008
<i>Taenianotus triacanthus</i> Lacépède, 1802			●				1	?		 © Robert K. Whitton 2009
Family: Synanceiidae										
<i>Synanceia verrucosa</i> Bloch & Schneider, 1801				●			1	?		 © John L. Earle 2010
Order: Syngnathiformes										
Suborder: Syngnathoidei										
Family: Aulostomidae										
<i>Aulostomus chinensis</i> (Linnaeus, 1766)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Fistulariidae										

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Fistularia commersonii</i> Rüppell in Rüppell, 1838	●	●		●	●		1	1		 © Robert K. Whitton 2008
Family: Solenostomidae										
<i>Solenostomus armatus</i> Weber, 1913						●	None	None		 © Mike Neumann 2022
Family: Syngnathidae										
<i>Dunckerocampus naia</i> Allen & Kuitert, 2004						●	None	None		[No Image Available]
Order: Tetraodontiformes										
Suborder: Tetraodontoidei										
Family: Balistidae										
<i>Balistapus undulatus</i> (Park, 1797)	●	●		●	●		11-100	11-100		 © Robert K. Whitton 2022
<i>Balistoides conspicillum</i> (Bloch & Schneider, 1801)	●	●		●	●		2-10	2-10		 © John L. Earle 2010
<i>Balistoides viridescens</i> (Bloch & Schneider, 1801)	●	●	●	●	●		1	2-10	1	 © John L. Earle 2009
<i>Melichthys vidua</i> (Richardson, 1845)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Odonus niger</i> [Rüppell, 1835-1838]	●	●	●	●	●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Pseudobalistes flavimarginatus</i> (Rüppell in Rüppell, 1829)				●			1	?		 © Robert K. Whitton 2010

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Pseudobalistes fuscus</i> (Bloch & Schneider, 1801)						●	None	None		 © Mike Neumann 2011
<i>Rhinecanthus rectangulus</i> (Bloch & Schneider, 1801)	●	●			●		2-10	2-10		 © John L. Earle 2008
<i>Sufflamen bursa</i> (Bloch & Schneider, 1801)	●	●			●		2-10	11-100	1	 © Robert K. Whitton 2022
<i>Sufflamen chrysopterygum</i> (Bloch & Schneider, 1801)		●	●		●		11-100	1	-2	 © Robert K. Whitton 2022
<i>Xanthichthys auromarginatus</i> (Bennett, 1832)				●	●		2-10	2-10		 © Robert K. Whitton 2022
Family: Diodontidae										
<i>Diodon hystrix</i> Linnaeus, 1758		●	●	●			2-10	?		 © Robert K. Whitton 2010
<i>Diodon liturosus</i> Shaw in Shaw, 1804				●			1	?		 © John L. Earle 2010
Family: Monacanthidae										
<i>Aluterus scriptus</i> (Osbeck, 1765)	●	●			●		1	2-10	1	 © John L. Earle 2008
<i>Amanses scopas</i> (Cuvier, 1829)		●			●		2-10	2-10		 © Robert K. Whitton 2022

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Cantherhines dumerilii</i> (Hollard, 1854)	●				●		2-10	2-10		[No Image Available]
<i>Cantherhines longicaudus</i> Hutchins & Randall, 1982				●			1	?		 © Mike Neumann 2011
<i>Cantherhines pardalis</i> (Rüppell, 1837)		●		●	●		11-100	2-10	-1	 © Robert K. Whitton 2022
<i>Oxymonacanthus longirostris</i> (Bloch & Schneider, 1801)		●	●		●		2-10	2-10		 © John L. Earle 2009
<i>Paraluteres prionurus</i> (Bleeker, 1851)		●					2-10	?		 © Robert K. Whitton 2008
<i>Pervagor janthinosoma</i> (Bleeker, 1854)		●	●		●		2-10	2-10		 © John L. Earle 2009
<i>Pervagor melanocephalus</i> (Bleeker, 1853)				●			2-10	?		 © Mike Neumann 2013
Family: Ostraciidae										
<i>Ostracion cubicus</i> Linnaeus, 1758	●	●	●	●			1	?		 © John L. Earle 2010
<i>Ostracion meleagris</i> Shaw in Shaw & Nodder, 1796	●		●				1	?		 © Robert K. Whitton 2009
Family: Tetraodontidae										

Scientific Name	2004	2008	2009	2010	2022	Other	Pre-COVID Abnd.	Post-COVID Abnd.	Change	
<i>Arothron hispidus</i> (Linnaeus, 1758)		●	●	●	●		2-10	1	-1	 © John L. Earle 2010
<i>Arothron mappa</i> (Lesson, 1831)	●	●		●			1	?		 © Robert K. Whitton 2010
<i>Arothron nigropunctatus</i> (Bloch & Schneider, 1801)	●	●	●	●	●		2-10	2-10		 © Robert K. Whitton 2022
<i>Arothron stellatus</i> (Bloch & Schneider, 1801)					●		1	1		 © Mike Neumann 2012
<i>Canthigaster axiologa</i> Whitley, 1931				●			2-10	?		 © John L. Earle 2010
<i>Canthigaster epilampra</i> (Jenkins, 1903)				●	●		?	1		[No Image Available]
<i>Canthigaster janthinoptera</i> (Bleeker, 1855)				●			1	?		 © Robert K. Whitton 2010
<i>Canthigaster solandri</i> (Richardson, 1845)			●		●		2-10	1	-1	 © John L. Earle 2009
<i>Canthigaster valentini</i> (Bleeker, 1853)			●				1	?		 © John L. Earle 2009

516 Total Species