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FISHERFOLK AWARENESS AND ATTITUDE TOWARDS PARROTFISH AND ITS CONSERVATION IN POLLILO ISLAND, QUEZON PHILIPPINES

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Abstract: Polillo Island is known for its beaches and marine life. However, due to destructive anthropogenic activities, residents notice a decline in natural resources. Especially evident is the decrease in fish catch. The parrotfish benefit a fisherfolk's livelihood by contributing to daily food sources and income of the fisherfolk. With the decline in its population, local environmental officials are regulating the fishing and consumption of this species. However, stakeholder commitment is crucial in achieving any conservation goal. Understanding fisherfolk attitudes and awareness of the resource and conservation initiatives increases the success rate of policy implementation. This study aims to determine (1) the socio-demographic characteristics of the fisherfolk; (2) their awareness of policies on (a) marine species conservation and (b) the conservation status of parrotfish; (3) their attitudes towards (a) conservation initiatives and marine protection regulations, and (b) their willingness to conserve the parrotfish species. This study also seeks (4) to analyze fisherfolk's socio-demographic characteristics' (age, annual income, educational attainment, and fishing experience) relationship to their awareness and attitude toward parrotfish species conservation. Results were analyzed using weighted mean, Pearson R correlation, and ANOVA one-way test. To gather data, a survey was employed in three villages with a sample of 177 fisherfolk who had experienced catching parrotfish. Results show that among the socio-demographic characteristics, fisherfolk's age and fishing experience are significantly related to their attitude toward conservation initiatives and marine protection regulations. The significance of older and experienced fisherfolk in conservation initiatives should be explored. They should be involved in encouraging new fisherfolk to conserve marine species. At the same time, conservation initiatives must be designed to benefit these experienced fisherfolk.

Keywords: fishing experience, parrotfish, fisherfolk attitudes

Introduction

The fishing industry holds a profound influence on the marine ecosystem, food security, and livelihoods (Pauly et al., 2002). Yet, due to the ocean's status as a common resource, the lack of monitoring and mismanagement has inflicted severe damage, especially on parrotfish populations. In the past, parrotfish were not commercially sold but freely shared among communities in Polillo island. However, recent years have seen a shift as parrotfish contribute to the income of fisherfolk. Beyond economic benefits, they play a crucial ecological role, aiding in bioerosion, algae control, and coral settlement (Bonaldo et al., 2004; Mumby, 2009). Parrotfish also enrich marine ecosystems by recycling nutrients and producing fine sand through digestion (Crossman et al., 2005). Despite their

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ecological importance and economic value, there is a notable absence of local conservation policies for parrotfish species in Quezon, especially in island municipalities where parrotfish are sold.

Historical accounts from fisherfolk in Sibulan reveal a decline in parrotfish abundance since the 1950s, attributed to growing populations and destructive fishing practices. Moreover, a once-frequent sight, the green humpback parrotfish (*Bolbometopon muricatum*), has become rare resulting in its International Union for the Conservation of Nature (IUCN) status shifting from 'least concern' to 'vulnerable' (Kobayashi et al., 2011). These developments highlight the need to assess fisherfolk's awareness and attitudes regarding parrotfish species.

Stakeholder commitment is pivotal for conservation efforts, yet scant research focuses on socio-psychological factors influencing conservation attitudes, particularly with regard to parrotfish species. Existing literature primarily addresses local residents, often overlooking fisherfolk who possess unique insights due to their sustained interaction with marine species (Patankar, 2019).

This study aims to address these gaps. It seeks to unveil (1) fisherfolk's socio-demographic characteristics, (2) their awareness of marine species conservation policies and parrotfish conservation status, (3) their attitudes toward conservation initiatives, marine protection regulations, and willingness to conserve parrotfish, and (4) analyze the relationships between socio-demographic factors (age, income, education, and fishing experience) and their awareness and attitudes toward parrotfish. Recognizing that perceptions and attitudes are influenced by subjective worldviews, awareness, knowledge, and socio-economic factors, this study endeavors to provide insights essential for effective wildlife conservation policies and strategies tailored to the local context.

Materials and Methods

This study employs a descriptive research design to determine the socio demographic characteristics, marine conservation awareness levels, and attitudes of fisherfolk in Polillo, Quezon, particularly in the villages of Bucao, Languyin, and Sibulan, towards parrotfish. These three villages were selected due to their prominence in parrotfish catches, given the rich marine biodiversity in Polillo, which sustains the livelihoods of many residents. Parrotfish species, once overlooked, have gained economic significance and are now sold in local markets. Therefore, understanding fisherfolk's perspectives on parrotfish and their conservation is crucial for evaluating the effectiveness of relevant environmental laws and local policies. Using total population sampling, the study aims to assess the entire population with specific characteristics, in this case, fisherfolk engaged in parrotfish fishing as listed by the Department of Agriculture (DA).

A Key Informant Interview (KII) was conducted with 12 individuals, including heads of municipal environmental offices, barangay captains, fisherfolk organization leaders, fish vendors, middlemen/traders, and a representative from Bureau of Fisheries and Aquatic Resources (BFAR) of Quezon province. These key informants possess valuable knowledge about national and municipal ordinances, parrotfish ecology, its economic benefits, and other pertinent details. The KII was audio-recorded with participant consent, serving as a crucial step to validate and finalize the survey questionnaire before the main survey.

Subsequently, a pre-testing phase was carried out in Bislian, Polillo, Quezon, involving 25 participants, constituting 10 percent of the total respondents. This pre-testing aims to identify potential

issues in the questionnaire and determine its suitability for the target respondents. Informed consent forms were distributed to the participants to determine their willingness to participate in data collection.

The primary research instrument is a structured questionnaire, crafted based on existing literature related to the topic and was refined through the KII and pre-testing. The questionnaire comprises four sections: socio-demographic characteristics, fisherfolk perceptions of parrotfish benefits, awareness of parrotfish conservation policies, and attitudes toward parrotfish conservation. Likert-type scale questions was used to evaluate perceptions and attitudes. Data collected was analyzed using various methods, including percentage formula for socio-demographic characteristics, computation of weighted means for awareness and attitude sections, Pearson Product Moment Coefficient of Correlation to assess relationships between variables like age, income, and fishing experience, and ANOVA one-way test to examine the relationship between educational attainment and the aforementioned variables.

Results and Discussion

Socio-demographic characteristics

This study involved surveying 177 fisherfolk hailing from Polillo Island's top three villages known for their significant parrotfish catches. Table 1 summarizes the respondents age, gender, educational background, annual income (in Philippine Pesos), years of fishing experience, and their affiliation with fishing organizations. In terms of age, 112 individuals (63%) are in the age group of 51-60 years. This result is slightly different to Maxino and Torete (2017) in which most of their fisher respondents were in the age bracket of 41 to 50. This suggests that the surveyed fisherfolk are primarily either approaching retirement age or have already reached the recognized retirement age in the Philippines.

Undoubtedly, males dominated the population with 169 individuals (95%), while females constituted only 5%. Fishing remains predominantly a male occupation, aligning with the Philippine Department of Labor and Employment (DOLE) report, which indicates that 90% of those engaged in fishing are men (Torell et al., 2021). This trend, as supported by Santos et al. (2011), is attributed to the physically demanding nature of fishing activities and potential risks, limiting female participation. Additionally, one fisherfolk respondent mentioned that wives typically manage household duties, children, and preparing their husbands' fishing necessities instead of going directly to the sea to fish (Respondent 3, personal communication, May 18, 2022).

Table 1: Socio-demographic profile of the respondents.

Characteristics		Frequency (N=177)	Percentage (%)
Age	21-30	6	3
	31-40	11	6
	41-50	40	23
	51-60	112	63
	61 and above	8	5
Sex	Male	169	95
	Female	8	5
Educational Attainment	Elementary Level	100	56
	Highschool Level	69	39

	College Level	8	5
Annual Income (in PhP)	40,000-59,999	43	24
	60,000-79,999	46	26
	80,000-99,999	73	41
	100,000 and above	15	8
Fishing Experience	Less than a year	7	4
	1 to 5 year/s	19	11
	6 to 10 years	58	33
	11 years and above	93	53
Fishing Organization Affiliation	Yes	114	64
	No	63	36

In terms of educational attainment, the majority, comprising 100 respondents (56%), have completed or attended elementary school. These findings parallel the research of Mercado and Mercado (2019) in the northern part of Surigao Del Sur, Philippines, where 66.86% of participants had an elementary education. Similarly, Turgo (2010) found that 70% of respondents completed elementary school, which may explain their engagement in fishing due to limited employment opportunities resulting from lower educational attainment.

In terms of the participants' annual income, results showed that the majority, 73 individuals (41%), earn 80,000 to 99,999 pesos annually (~$1,400.00-$1,750.00). According to Albert et al. (2020), individuals earning less than 131,484 pesos annually (equivalent to less than 10,957 pesos per month) fall into the "poor" income group. Given the data, the majority falls within the 80,000 to 99,999 pesos yearly range (6,667 – 8,333 pesos monthly), placing them in the "poor" category. One fisherfolk from Bucao highlighted the income instability in fishing due to factors like adverse weather and bright moon phases, leading to approximately two months of no catch in a year. Additionally, the need to rent boats and split income among several fisherfolk, including the boat owner, contributes to their low annual income (Participant 4, personal communication, May 27, 2022).

In terms of years of fishing experience among the participants, over half of the respondents, precisely 93 individuals (53%), have accumulated 11 or more years of fishing experience, while a smaller group, comprising only seven (7) individuals (4%), have less than a year of experience.

The tradition of fishing often commences at a young age, typically around six years old, as parents involve their children in fishing trips and impart the trade (Vieira et al., 2013). For instance, one fisherfolk from Sibulan shared that he was taught to catch fish by his father at a young age, and he continues to practice it to this day (Participant 2, personal communication, May 26, 2022).

Affiliation to fishing organizations is important to fisherfolk. Survey results reveal that 114 individuals (64%), are active members of fishing organizations in their respective barangays, which include the Sibulan Development Fishing Association, Samahan ng Maliliit na Mangingisda ng Bucao, and Macnit Fishermen’s Association in Barangay Languyin.

Participation in these organizations offers several advantages. These benefits include the ability for organizations to request fishing tools from local and regional offices, with exclusive usage by their members. Furthermore, they receive priority access to seminars and training opportunities (Participant

13, personal communication, May 27, 2022). This aligns with of Nalzaro (2016), which emphasize that fisherfolk are incentivized to join fishing organizations due to the support they receive. These incentives encompass technical assistance, training, credit assistance, and livelihood opportunities. Importantly, local policies and conservation initiatives are effectively disseminated through organizational training sessions, enhancing members' knowledge. Moreover, the provision of appropriately sized nets and incentives by the municipal agriculture office reduces the likelihood of prohibited net purchases, particularly considering the fisherfolk's lower annual incomes.

Awareness of Marine Species Conservation

In this study, awareness refers to the degree of consciousness of fisherfolk toward policies and initiative related to parrotfish conservation that was assessed through this research by means of a structured questionnaire. This includes awareness of (a) policy regarding the conservation of marine species; and (b) conservation status of parrotfish species.

Awareness of Policy regarding the Conservation of Marine Species. Table 2 shows the distribution of responses of fisherfolk's awareness of marine species conservation policy. This reveals that fisherfolk are highly aware of penalties for violating laws protecting marine species (4.79), destructive fishing practices (4.77), dynamite fishing as a prohibited fishing practice (4.77), permission to use spear-gun to catch parrotfish (4.76), and the prohibition of the use of kapandra (4.75).

Table 2: Fisherfolk Responses toward their Awareness of Marine species Conservation Policies

No.	Statements	SA (5)	A (4)	N (3)	D (2)	SD (1)	WM	VI
1.	Penalties/consequences for violating laws protecting marine species	142	33	2	0	0	4.79	SA
2.	Destructive/prohibited fishing practices	142	33	0	0	2	4.77	SA
3.	Dynamite fishing as a prohibited fishing practice	141	34	0	1	1	4.77	SA
4.	Permission to use spear-gun to catch parrotfish	142	32	0	1	2	4.76	SA
5.	Prohibition of the use of *kapandra*	142	31	0	2	2	4.75	SA
6.	Prohibition of the use of *buli-buli*	140	31	1	2	3	4.71	SA
7.	Prohibition of the use of size 10 fishing nets	133	36	0	4	4	4.64	SA
8.	Prohibition of fishing in marine reservations and sanctuaries	133	28	5	6	5	4.57	SA
9.	Awareness of local government policies related to fishing	141	14	6	9	7	4.54	SA
10.	Prohibition of fishing practices such as *kayakas paaling* and *lampornas*	133	24	10	3	7	4.54	SA
11.	Prohibition of the use of *panting kalabaw*	134	21	8	9	5	4.53	SA

	throughout the year							
12.	Local policies on protection and conservation of marine species are being monitored by local and village officials	132	22	7	7	9	4.47	SA
13.	Prohibition of the use of *panting kalabaw* during the egg laying season	1	8	3	30	135	1.36	SD

Legend: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly Agree, WM – Weighted Mean, VI – Verbal Interpretation

Respondents claim to be highly aware of penalties for violating laws protecting marine species (4.79). According to a conversation with a fisherfolk-respondent (Respondent A, February 20, 2022), breaking the law, such as using an inappropriate net size, can result in fines of ₱5,000 (about $88) per individual, not including boat retrieval expenses.

On the other hand, respondents claim to also be aware of destructive fishing practices (4.77) and dynamite fishing as a destructive practice (4.77). Additionally, the respondents claim to also be aware that two other destructive fishing practices, using *kapandra*/compressor (4.74) and *buli-buli* (4.71) are prohibited. According to Section 92 of Republic Act 10654, an amendment to Republic Act 8550, commonly known as The Philippine Fisheries Code of 1998, the use of dynamite and other explosive materials is illegal. Municipal ordinances in Polillo, Quezon, align with national laws and are enforced through the involvement of barangay officials, select fisherfolks, organization presidents, or the organizations.

Despite the fact that only about one-third of the population uses spear-guns for fishing, the majority is well aware that this method is permitted (4.74). In Polillo, there are ten fishing methods, including *kitang, saliwsiw, ug-ug, panting kalabaw sagnod, malamba*, and the most commonly used methods are *lambat* (fish net), *kawil* (hook) and line, and *pana* (spear-gun) (Respondent B, personal communication, 2022). This information is effectively conveyed by *Bantay Dagat* (Sea Patrol), organization presidents, and DA staff during meetings to ensure that fisherfolk are well-informed.

The findings indicate that fisherfolk are highly aware of penalties for violating marine species protection laws, destructive fishing practices, and the prohibition of certain fishing methods, which align with national laws and are effectively communicated through local mechanisms. Despite variations in fishing practices, the majority of fisherfolk demonstrate awareness of these conservation policies.

Awareness of Conservation status of Parrotfish species. Table 3 shows the fisherfolk's responses to their awareness of the parrotfish species' conservation status. Fisherfolk often have a deep connection to the marine environment and may play a critical role in its conservation. Hence, being informed about conservation status of the fish they catch fosters a sense of environmental stewardship, motivating fisherfolk to protect and preserve the marine resources they depend on for their livelihoods. Survey results reveal their agreement with the statements (1) princess parrotfish is listed as least concern as well (2) queen parrotfish with value of (4.44) and (4.28) respectively; (3) green

humphead parrotfish is listed as vulnerable in IUCN status; (4) IUCN determine the conservation status of species (4.06); and (5) Bower's parrotfish is listed as least concern (4.03).

Table 3: Fisherfolk Responses toward their Awareness of Parrotfish species Conservation Status

No.	Statements	SA	A	N	D	SD	WM	VI
1.	The Princess Parrotfish (Scarus taenioterus) is listed as "Least Concern" in conservation status	109	54	5	1	8	4.44	SA
2.	The Queen Parrotfish (Scarus vetula) is listed as "Least Concern" in conservation status	107	45	0	18	7	4.28	SA
3.	The Green humphead (*Bolbometopon muricatum*) is listed as "Vulnerable" in conservation status	106	37	5	17	12	4.18	A
4.	The International Union of Conservation (IUCN) helps identify the status for conservation of specific parrotfish species	93	49	4	14	17	4.06	A
5.	The Bower's parrotfish (Chlorurus bowersi) is listed as "Least Concern" in conservation status	84	60	2	16	15	4.03	A
6.	The Greenback Parrotfish (Scarus trispinosus) is listed as "Nearly Threatened" in conservation status	83	27	0	46	21	3.59	A
7.	The Bluebarred Parrotfish (Scarus ghobban) is listed as "Least Concern" in conservation status	84	34	3	31	25	3.68	A
8.	If the parrotfish is listed as Vulnerable, it means they are likely to become endangered unless situation threatening its survival and reproduction is improved	77	34	3	32	31	3.53	A
9.	If the parrotfish is listed as Least Concern, it means they have lower risk of extinction	60	47	0	39	31	3.37	N
10.	If the parrotfish is listed as extinct, it means they no longer exist in this planet	64	35	5	33	40	3.28	N
11.	Encountered the term "IUCN Status of Conservation" before	14	8	0	37	118	1.66	SD

Legend: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly Agree, WM – Weighted Mean, VI – Verbal Interpretation

Table 7 highlights the top three statements with the highest mean scores: (1) Princess parrotfish (*Scarus taenioterus*) listed as Least Concern in IUCN status (4.47, strongly agree); (2) Queen parrotfish (*Scarus vetula*) also listed as Least Concern (4.28, strongly agree); and (3) Green humphead (*Bolbometopon muricatum*) categorized as vulnerable in IUCN status (4.18, agree). These results align with Comeros-Raynal's study (2012) categorizing Queen and Princess parrotfish as Least Concern and Green humphead as vulnerable. Participant feedback confirms these findings, with (*S. vetula*) and (*S. taenioterus*) frequently caught while (*B. muricatum*) is seldom seen (Respondent 4, personal communication, May 15, 2022).

Conversely, the statement ranking lowest in mean score is "I have encountered the phrase IUCN Status of Conservation" (1.66, strongly disagree). Some participants, like the president of a fishing organization, have heard of it but lack a clear understanding due to limited discussion during conservation seminars. This contrasts with the high mean scores, suggesting that familiarity with IUCN categories may not be a factor in participants' responses regarding parrotfish conservation status.

Finally, the statement ranking tenth out of eleven is "If the parrotfish is listed as extinct, it means they no longer exist on the planet" (3.28, neutral). Some participants interpret "extinct" as a global disappearance, while others believe species will never be completely exterminated (Respondent 3, personal communication, May 19, 2022). This reflects differing perspectives on the implications of extinction status.

Attitude Toward Conservation of Parrotfish

In this study, attitude refers to the positive or negative feelings and beliefs, favorable or non-favorable actions of a fisherfolk towards the idea of conserving parrotfish species that will be measured in this study using a structured questionnaire. This provides insight on how fisherfolk will comply with parrotfish conservation initiatives and other marine protection regulations, economic losses caused by destruction of parrotfish species' habitat, and the degree to which they are willing to conserve the parrotfish species.

Attitude regarding Compliance with Conservation Initiatives and Marine Protection Regulations. Based on Table 4, fisherfolk express strong positive attitudes towards (1) not using dynamite to capture parrotfish, (2) not fishing in sanctuaries, (3) using non-destructive fishing methods to catch parrotfish, (4) not using triplets during egg-laying season, and (5) joining organizations concerned about the conservation of marine life.

Among the statements, majority of fisherfolk positively agree that they should not use dynamite when catching parrotfish. This is attributed to the strict prohibition and awareness among fisherfolk, reinforced by the fear of accidents involving dynamite use, which used to be more common in the town but is now strictly banned (Respondent 5, personal communication, February 17, 2022). The statement obtaining the second highest mean is connected to not fishing in declared marine

sanctuaries. This reflects the understanding that fish sanctuaries are protected areas crucial for fisheries resource management and conservation, and fishing is strictly prohibited in these zones (Respondent 6 and 7, personal communication, February 20, 2022).

Conversely, the statement obtaining the lowest mean score is related to fisherfolk 'not' using dynamite fishing anymore. Many participants believe dynamite fishing is still occurring, with one citing the sound of explosive fishing as evidence (Respondent 8, personal communication, 2022). This perception aligns with data showing that despite awareness of dynamite prohibition, the practice persists, often among fisherfolk from other municipalities, influenced by factors such as efficiency, cost-effectiveness, and migratory fishing practices (Muny, n.d.). Destructive fishing methods threaten species, the local ecosystem, and the well-being of the barangay's residents.

Table 4: Fisherfolk Attitudes and Compliance with Conservation Initiatives and Marine Protection Regulations

No.	STATEMENTS	SA	A	N	D	SD	WM	VI
1.	Does not use dynamite to capture parrotfish	164	13	0	0	0	4.93	SA
2.	Never tried to fish in areas proclaimed as fish sanctuaries	149	28	0	0	0	4.84	SA
3.	Only uses non-destructive fishing methods to catch parrotfish	147	28	2	0	0	4.82	SA
4.	Does not use triplets during egg-laying season (March to May)	147	28	0	1	1	4.80	SA
5.	Willing to join organizations that are concerned about conservation of marine life	140	23	3	3	8	4.60	SA
6.	Willing to attend training/seminars that involve marine protection	141	19	3	7	7	4.58	SA
7.	Claims that fisherfolk today does not use dynamite for fishing anymore.	6	2	4	23	142	1.34	SD

Legend: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly Agree, WM – Weighted Mean, VI – Verbal Interpretation

Fisherfolk Attitudes toward their willingness to conserve parrotfish species in Polillo, Quezon. The respondents generally expressed positive attitudes towards the conservation of parrotfish in Polillo, Quezon. The top statements garnering the highest means include strong agreement to the importance of marine conservation laws (4.86), local ban on catching parrotfish using destructive methods (4.82), conservation of parrotfish as a way of coral reef protection (4.80), adherence to local marine conservation policies (4.80), and the important role of fisherfolk organizations in marine ecosystem conservation (4.77).

Table 5: Fisherfolk Attitudes and Compliance with Conservation Initiatives and Marine Protection Regulations

No.	STATEMENTS	SA	A	N	D	SD	WM	VI
1.	Marine conservation laws are important	153	24	0	0	0	4.86	SA
2.	There should be a local ban on catching parrotfish using destructive methods of fishing	151	24	0	1	1	4.82	SA
3.	By conserving Parrotfish, I contribute to coral reef protection	148	26	1	1	1	4.80	SA
4.	I will adhere to local marine conservation policies.	147	27	2	0	1	4.80	SA
5.	Organization of fisherfolks which aims to conserve marine ecosystem must be given support and acknowledgement.	151	19	2	2	3	4.77	SA
6.	I am willing to support parrotfish protection projects and initiatives in exchange for financial compensation.	146	24	2	2	3	4.74	SA
7.	It is important to conserve the parrotfish.	145	26	1	1	4	4.73	SA
8.	I endorse the establishment of fish sanctuaries in the town of Polillo.	149	19	1	2	6	4.71	SA
9.	It is crucial to educate the children of Polillo about the conservation of marine species, such as the Parrotfish.	144	21	3	4	5	4.67	SA
10.	It would be beneficial for the municipality of Polillo to develop a monitoring plan for Parrotfish.	142	20	3	5	7	4.61	SA
11.	I would like to learn more about conserving parrotfish.	133	33	0	4	7	4.59	SA
12.	The conservation of the parrotfish should be a priority of the Polillo LGU.	137	21	2	10	7	4.53	SA
13.	Enforcing regulations for the capture of Parrotfish is essential.	128	33	3	3	10	4.50	SA
14.	Scientist tend to exaggerate the effects of fishing practices to fish population like parrotfish.	106	15	3	4	49	3.71	A
15.	Social media posts often	98	22	7	5	45	3.69	A

	exaggerate the impact of fishing practices on fish populations, such as parrotfish.		

Legend: SA – Strongly Agree, A – Agree, N – Neutral, D – Disagree, SD – Strongly Agree, WM – Weighted Mean, VI – Verbal Interpretation

Table 5 reveals the highest mean score of 4.86, indicating strong agreement, for the statement "Marine conservation law is important." These laws are vital for safeguarding marine ecosystems and sustaining fish populations, such as by banning practices like dynamite fishing that would otherwise harm fish stocks (Respondent 8, February 20, 2021). Given that fishing is a primary income source in places like Polillo, Quezon, strict enforcement of marine conservation laws is crucial.

The second-highest mean score (4.82, strongly agree) is associated with the statement "There should be a local ban on catching parrotfish using destructive fishing methods." This highlights the need for stringent implementation to address issues like the use of triplets nets, which pose a threat to parrotfish populations and can be unfair to compliant fisherfolks (Respondent 9, personal communication, February 20, 2022).

Two statements earned mean scores of 4.80 with an interpretation of "agree": " By conserving Parrotfish, I contribute to coral reef " and " I will adhere to local marine conservation policies." This demonstrates the fisherfolks' willingness to personally comply with marine conservation initiatives, recognizing the importance of policies and the interconnectedness of parrotfish and coral reefs. On the other hand, the statements regarding social media posts and scientists exaggerating the effects of fishing practices on parrotfish populations, received mean scores of 3.71 and 3.69, respectively. The results may be influenced by the fact that 42% of participants have no social media accounts and spend their time at sea or on other tasks rather than engaging with social media or scientific literature related to fishing practices (International Labour Conference, 2004; Respondent 10, personal communication, May 14, 2022).

In summary, fisherfolks demonstrate a positive attitude toward parrotfish conservation initiatives, emphasizing the importance of marine conservation laws and the need for local bans on destructive fishing methods while acknowledging their role in compliance and reef protection. The variation in responses regarding social media and scientific exaggeration may stem from differences in social media usage and accessibility to scientific information among participants.

Fisherfolk's Socio-demographic characterstics' relationship to their awareness and attitudes toward parrotfish conservation. All socio-demographic characteristics (age, annual income, educational attainment, and fishing experience) values of the fisherfolk were correlated to their awareness and attitude toward parrotfish species conservation. Results show that among the socio-demographic characteristics, fisherfolk's age and fishing experience are significantly related to their attitude toward conservation initiatives and marine protection regulations.

Table 6 shows the relationship between fisherfolk's age and their awareness and attitude toward marine species, especially parrotfish conservation. Interestingly, the results show that age is not significantly associated with awareness among fisherfolks. However, when it comes to their attitude towards compliance with conservation initiatives and other marine protection regulations, age does

play a role, albeit with a very weak positive correlation of 0.018. In this study, it's noteworthy that older fisherfolks are more inclined to adhere to marine resource policies, which is indeed a promising sign since most respondents in this research are older.

Table 6: Relationship of age of the fisherfolk to their awareness and attitudes towards marine species conservation

Variables	Pearson R	R^2	Correlation	p	Decision
Awareness of Policies on Marine Conservation Policies	0.02	0.000	Very Weak Positive	0.795	Accept H_o
Awareness of Conservation Status of Parrotfish	0.078	0.006	Very Weak Positive	0.301	Accept H_o
Attitude towards compliance to Marine Conservation initiatives	0.178	0.032	Very Weak Positive	0.018	Reject H_o
Attitudes toward their willingness to Conserve parrotfish species	0.113	0.013	Very Weak Positive	0.133	Accept H_o
Legends: R^2 – R squred, p – probability value, Ho – Null Hypothesis					
Decision: If p<0.05 reject the null hypothesis, while if p>0.05 accept the null hypothesis					

Table 7 presents the relationship between fisherfolk's years of fishing experience and their awareness and attitude toward parrotfish species conservation. The findings indicate that there is no significant relationship between fishing experience and attitude but there is a correlation with awareness. Specifically, the results reveal that fisherfolk's years of fishing experience do not influence their awareness of parrotfish species conservation. However, there is a very weak positive correlation with their attitude, including compliance with conservation initiatives and willingness to conserve parrotfish, with correlation coefficients of 0.011 and 0.34, respectively. This aligns with previous research by Ngodigha and Abowei (2015), which also found that years of fishing experience significantly impact attitudes toward conservation initiatives. As shown in Table 1, the majority of respondents in this study have 11 years or more of fishing experience. This suggests that the longer individuals remain engaged in the fishing industry as they age, the more likely they are to adhere to conservation policies.

Table 7: Relationship of years of fishing experience of fisherfolk to their awareness and attitudes towards marine species conservation

Variables	Pearson R	R^2	Correlation	p	Decision
Awareness of Policies on Marine Conservation Policies	-0.027	0.001	Very Weak Negative	0.718	Accept H_o
Awareness of Conservation Status of Parrotfish	0.104	0.011	Very Weak Positive	0.170	Accept H_o
Attitude towards compliance to Marine Conservation initiatives	0.191	0.036	Very Weak Positive	0.011	Reject H_o
Attitudes toward their willingness to Conserve parrotfish species	0.159	0.025	Very Weak Positive	0.034	Reject H_o
Legends: R^2 – R squred, p – probability value, Ho – Null Hypothesis					
Decision: If p<0.05 reject the null hypothesis, while if p>0.05 accept the null hypothesis					

4. Conclusion

Enhancing our understanding of fisherfolk's views and knowledge regarding resource conservation initiatives plays a pivotal role in the effective implementation of policies. Through surveys and KII, this study aims to determine (1) the socio-demographic characteristics of the fisherfolk; (2) their awareness of policies on (a) marine species conservation and (b) the conservation status of parrotfish; (3) their attitudes towards (a) conservation initiatives and marine protection regulations, and (b) their willingness to conserve the parrotfish species.

This study also seeks (4) to analyze fisherfolk's socio-demographic characteristics' (age, annual income, educational attainment, and fishing experience) relationship to their awareness and attitude toward parrotfish species conservation in Polillo, Quezon, particularly in the villages of Bucao, Languyin, and Sibulan, towards parrotfish.

The fisherfolk are mostly male, aged 51 to 60, who have completed an elementary education and earning about 80,000 to 99,999 Philippine pesos per year. They have reported strong awareness of marine conservation policies and positive attitudes toward marine conservation and the conservation of parrotfish. The findings indicate that within the realm of socio-demographic factors, the age and fishing experience of fisherfolk exhibit notable correlations with their attitudes toward conservation efforts and regulations for marine protection. The importance of engaging older, more seasoned fisherfolk in conservation initiatives deserves further exploration. These individuals can play a pivotal role in mentoring and inspiring newer members of the fishing community to actively participate in the preservation of marine species. Simultaneously, conservation programs should be tailored to offer advantages and incentives that specifically cater to these experienced fisherfolk.

Declaration of Interest Statement

The authors declare that they have no conflict of interests.

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