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Cover: Emperor Tamarin *Saguinus imperator*: a look into a better world through the mustache lens – mixed media illustration. © Maya Santhanakrishnan.

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ARTICLE

Philippine Warty Pig *Sus philippensis* Nehring, 1886: level of awareness and conservation practices in Datal Bad, West Lamidan, Don Marcelino, Davao Occidental, Philippines

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Abstract: The Philippines is a biodiversity hotspot with four endemic wild pig species. The Philippine Warty Pig is a medium to large size mammal that is usually solitary. They commonly exhibit crop raiding behavior, and hunting by farmers and poachers decreases populations of this species, which is listed as 'Vulnerable' in the IUCN Red List of Threatened Species. This study was conducted to determine the level of awareness of Philippine Warty Pig conservation practices among locals in sitio Datal Bad, West Lamidan, Don Marcelino Davao Occidental, Philippines. Responses (N = 50) were gathered by a survey questionnaire. Respondents were highly aware of Philippine Warty Pigs and policies toward wildlife conservation. They reported hunting pigs using air guns 'sorit', bow and arrow 'papana', harpoon 'bangkaw', and snare 'lit-ag'. The respondents added that they performed religious rituals and farming that may pose threats to Philippine Warty Pigs. They also manifested a willingness to work with government and academic institutions to enhance knowledge about conservation of pigs and other wildlife in their locality.

Keywords: Biodiversity, bow and arrow, conservation, endemic, harpoon, hunting, indigenous people, snare, threats, wildlife.

Filipino: Ang Pilipinas ay isang biodiversity hotspot na may apat na endemikong uri ng baboy sa gubat. Ang Philippine Warty Pig ay isang hayop na karaniwang malaki ang sukat na kadalasang nag-iisa. Karaniwan silang nangunguna sa pagnanakaw sa pananim, at ang pangangaso ng mga magsasaka at mangangaso ay nagpapababa sa populasyon ng uri na ito, na nasa listahan bilang 'Vulnerable' sa IUCN Red List ng mga Nanganganib na Uri. Isinagawa ang pag-aaral na ito upang matukoy ang antas ng kamalayan sa mga patakaran ng konserbasyon ng Philippine Warty Pig sa mga lokal sa sitio Datal Bad, West Lamidan, Don Marcelino Davao Occidental, Pilipinas. Ang mga Tugon (N = 50) ay nakuha sa pamamagitan ng isang survey questionnaire. Ang mga respondente ay lubos na may kamalayan sa mga Philippine Warty Pigs at sa mga patakaran patungkol sa konserbasyon ng wildlife. Nag-ulat sila ng pangangaso ng mga baboy gamit ang mga baril na 'sorit', pana at panaan na 'papana', harpoon na 'bangkaw', at bitag na 'lit-ag'. Nagdagdag ang mga respondente na kanilang isinasagawa ang relihiyosong ritwal at pagsasaka na maaaring magdulot ng panganib sa mga Philippine Warty Pigs. Nagpahayag din sila ng kagustuhang makipagtulungan sa pamahalaan at mga akademikong institusyon upang mapalawak ang kaalaman tungkol sa konserbasyon ng mga baboy at iba pang wildlife sa kanilang lugar.

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INTRODUCTION

The Philippines is one of the world's biodiversity hotspots, with four endemic wild pig species: three warty pigs and one bearded pig (Cariño 1998; Meijaard & Melletti 2017). As mentioned in the study of Villegas et al. (2022), the warty pigs *Sus cebifrons* (Heude, 1888), *Sus oliveri* (Groves, 1997), *Sus philippensis* (Nehring, 1886), and the Palawan Bearded Pig *Sus ahoenobarbus* (Huet, 1888) can be found in the islands of Luzon, Visayas, Palawan, and Mindanao. *S. philippensis* morphological characteristics comprise of commonly black with grey colored fur and a pale snout band. They also have long full crown tuft and nuchal mane extended along the back of a male Philippine warty pigs with pairs of warts and gonial tufts (Meijaard & Melletti 2017; Cabanas et al. 2022;). This large to medium sized mammal is usually found in solitary or with their young in areas where there is an open canopy, near clearings like plantations, trees with smaller DBH, areas with abundance of fruits, and adjacent to streams which the warty pigs can access easily (Cabanas et al. 2022; Villegas et al. 2022; Gamalo et al. 2023).

The warty pigs is known to raid crops, and farmers tend to hunt them which drives the population of this species to decrease (Cabanas et al. 2022). Aside from hunting and poaching, some threats to Philippine warty pigs that contributed to its decline are habitat destruction, pathogens (African Swine Fever Virus), and hybridization (Blouch 1995; Villegas et al. 2022; Gamalo et al. 2023). With these risks, the Philippine Red List Committee (PRLC) and the International Union for Conservation of Nature (IUCN) Red List for Threatened Species have categorized *S. philippensis* as 'Vulnerable' (Meijaard & Melletti 2017; DENR-BMB 2020). In the report of Oliver (1995), wild pig populations in Davao Region are declining and very rarely seen in Mt. Apo. In the surrounding areas of Mt. Apo, various ethnicity exists with high potential for hunting warty pigs is observed as they only know that hunting is illegal only for charismatic species such as Philippine Eagle. Accordingly, RA 8371 or the Indigenous Peoples Right Act and RA 9147 or the Wildlife Resources Conservation and Protection Act clearly stated that utilization of wild animals for tradition and culture is permitted. But in the case of the warty pigs which is already considered as vulnerable, RA 9147 does not allow the use of vulnerable animals like the warty pigs to be utilized in any traditional or cultural practices to protect its declining population. However, hunting as tradition and lack of awareness as to the status of the warty pigs is one of the leading causes of population decline in the region (Tanalgo 2017).

Field investigation into specific environmental requirement, population structure, reactions to hunting strain, and commercial logging, are the some of the key factors that played an important role in the conservation of warty pigs (Blouch 1995). Highlighting in this paper is the Philippine Warty Pig *S. philippensis* which is reported to have sightings in Datal Bad West Lamidan, Don Marcelino, Davao Occidental especially in cultivated areas where vegetables and root crops were planted (P. Avenido pers. comm., March 8, 2023). Accordingly, a study by Cosico et al. (2017) stated that Philippine Warty Pig's main diet is composed of root crops, vegetables, fruits, and invertebrates which explains the sightings of warty pigs in West Lamidan. Given its occurrence in the area, no study related to its protection and conservation were done though communities mentioned that they safeguarded this species as it is said to be a natural resource in their land. To address this gap, this current paper aimed to determine the level of awareness and identify local conservation practices of the locals in Datal Bad West Lamidan, Don Marcelino, Davao Occidental about the Philippine Warty Pig.

METHODS

Study area

This study was conducted in Datal Bad, West Lamidan, Don Marcelino, Davao Occidental (Figure 1). Datal Bad is situated approximately along 6.092578 N and 125.654225 E. The areas have an estimated elevation of 1,448.5 m (4,752.2 ft). Its population as of 2022 was 113 individuals comprising two indigenous groups namely the B'laan & Manobo, living and sharing the same culture. The study site is approximately 3.3 km from the barangay proper of West Lamidan and about 4.8 km from Don Marcelino. The main source of livelihood among the tribes is farming. They cultivate crops like corn, cassava, bananas, and abaca. The crops they produce are mainly for consumption while some are sold to merchants at the barangay site including the fiber produced from abaca. Datal Bad nested along the side of the forest and is not accessible to any mode of transportation, even horses. In marketing the farm produce, the tribes used to carry them along the slopes of the mountains to the barangay site passing through the fast-flowing river.

Research Design and Instrument

This study utilized a qualitative research design to examine the current state of Philippine Warty Pig conservation practices among the tribes in Datal Bad, West Lamidan. Descriptive research design was used to analyze the data from the survey questionnaire (Sedlock 2010) relative to the main purpose of the study. An adopted questionnaire formulated by Sedlock (2010) was used to gather information in the study site. The respondents considered in the study are residents of Datal Bad. Information collected includes respondents' demographic profile, hunting preferences, number of people who went to hunt, hunting methods, reasons of hunting, level of awareness, and conservation practices. The benchmark statements on the level of awareness on Philippine warty pig conservation among the residents in the study were rated using the Likert scale (Table 1).

The common human activities related to Philippine warty pig, the scale below was used to interpret the

Table 1. Scoring guide in the analysis of the response for the level of awareness on Philippine Warty Pig.

Range of Means	Scale	Description	Interpretation
3.3–4.0	4	Highly Aware	Indicators relating to the level of awareness on Philippine warty pig conservation practices are always employed. The level of awareness is fully manifested.
2.5–3.2	3	Aware	Indicators relating to the level of awareness on Philippine warty pig conservation practices are oftentimes employed. The level of awareness is manifested.
1.8–2.4	2	Unaware	Indicators relating to the level of awareness on Philippine warty pig conservation practices are moderately employed. The level of awareness is sometimes manifested.
1.0–1.7	1	Highly Unaware	Indicators relating to the level of awareness on Philippine warty pig conservation practices are seldom employed. The level of awareness is somehow manifested.

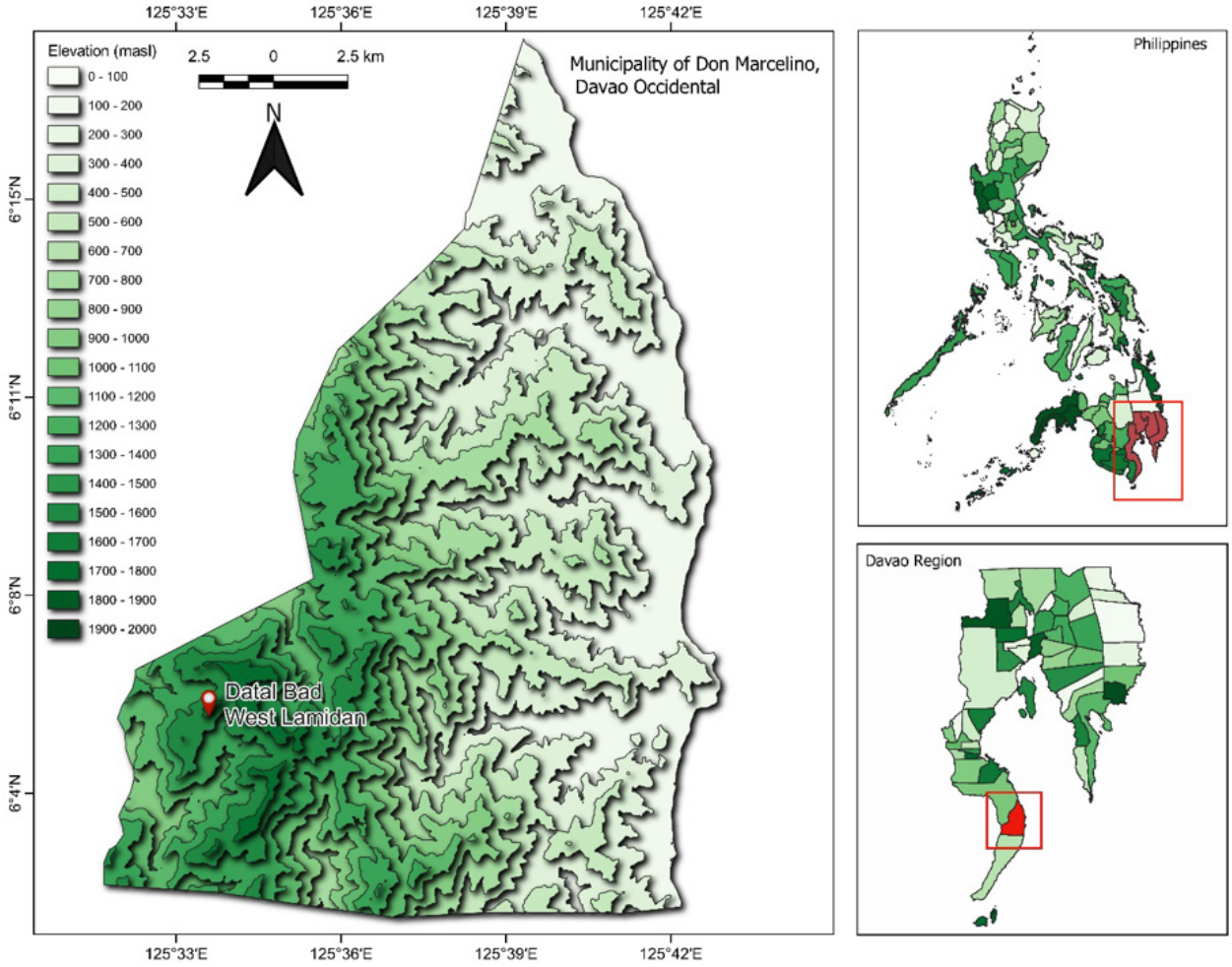

Figure 1. Digital elevation map of Don Marcelino, Davao Occidental.

responses of the respondents.

Respondents of the Study

An opportunistic randomly selected residents of the study site were surveyed. Simple random technique was used to identify respondents of the study out of the total population of Datal Bad (more than 10% of the entire population of the study area). Respondents were 15 years old and above. No sex preference as long as they reside in Datal Bad and have knowledge on Philippine warty pigs.

Data Analysis and Ethical Consideration

The data collected were analyzed using descriptive statistics such as frequency count, percentage, and mean. Mean is the measure of center or average and the most recognized type of descriptive statistics. It was used to repurpose hard-to-understand quantitative insights across a large data set into bite-sized descriptions. Mean was used to determine the average of quantitative data. It was calculated by adding all the figures within the data set and then dividing by the number of figures within the set.

The responsibility of the researcher in this study was to ensure that the respondents are well cared for during and after the conduct of the study. Therefore, the researcher made coordination with the tribal and indigenous leaders prior to the entry and survey proper. The researcher explained and elaborated to respondents the objectives of the study and the purpose of the visit. This helped ensure the researcher would bring no harm or danger to the respondents, their place, and community. This etiquette followed a set of ethical consideration to protect the participants (British Psychological Society 2000).

RESULTS AND DISCUSSION

Socio-Demographic and Socio-Economic Characteristics of Respondents

The socio-demographic and socio-economic variables may influence awareness on hunting Philippine warty pig and its conservation practices. In addition, the extent of awareness of these practices and attitudes towards them are significantly affected by age, gender, and level of education. Increasing knowledge is associated with more positive attitudes toward conservation. This conforms to the findings of Prokop (2009) that males showed greater knowledge of wildlife than women. Likewise, knowledge of wildlife conservation issues appears to be more extensive among men who are household heads and among people who own more livestock and, therefore, have higher economic status in the community.

Based on the interview, some indigenous group in the area are non-law abiders but they are the most knowledgeable about the wildlife. Poverty and lack of permanent job drives indigenous communities to hunt wildlife and exploiting possible resources that the environment could offer.

Demographic Characteristics of Respondents

The demographic profile of the respondents in the study is presented in (Figure 2). In terms of age, respondents at the age bracket of 29–37 years old dominated which accounted 38% followed by 20–28 years of age (22.0%). The age group with lowest percentage was observed in the age bracket of 65–73 years old at 6.0% (Fig. 2A). With regards to gender, the male respondents dominated over female respondents with 68.0% and 32.0%, respectively (Figure 2B). This result revealed that male is more knowledgeable and aware in the existence and status of Philippine warty pig, with this, the result of the survey is more accurate. However, the information generated from women are still valid and acceptable since they also have knowledge on the Philippine warty pig in the area. Male are more engaged into hunting as they are responsible for supporting their families' necessities such as food and income while female is commonly supporting their husband doing the routinary household chores. On the other hand, with respect to the number of siblings among the respondents, it was evident that each household has siblings ranged from 1–9 per household. Most respondents belonged to a household consist of nine individuals which is very common in a Filipino family despite its economic status (Figure 2C). Moreover, as to the educational attainment of the respondents (Figure 2D), there are 37 of them who are in the elementary level (74.0%) while 22.0% have graduated elementary. Furthermore, among the respondents, only one have reached high school (2.0%), and have finished high school (2.0%), respectively.

Figure 3 depicted the employment of the respondents. Results demonstrated that most of the respondents were farmers which accounted 68.0% while some of them earned a living being a paid laborer (14.0%). There were female respondents who earned as vendor whereas the lowest value was attributed to the carpenter with 2.0%. In terms of the monthly income of the respondents (Figure 4), Majority of the respondents

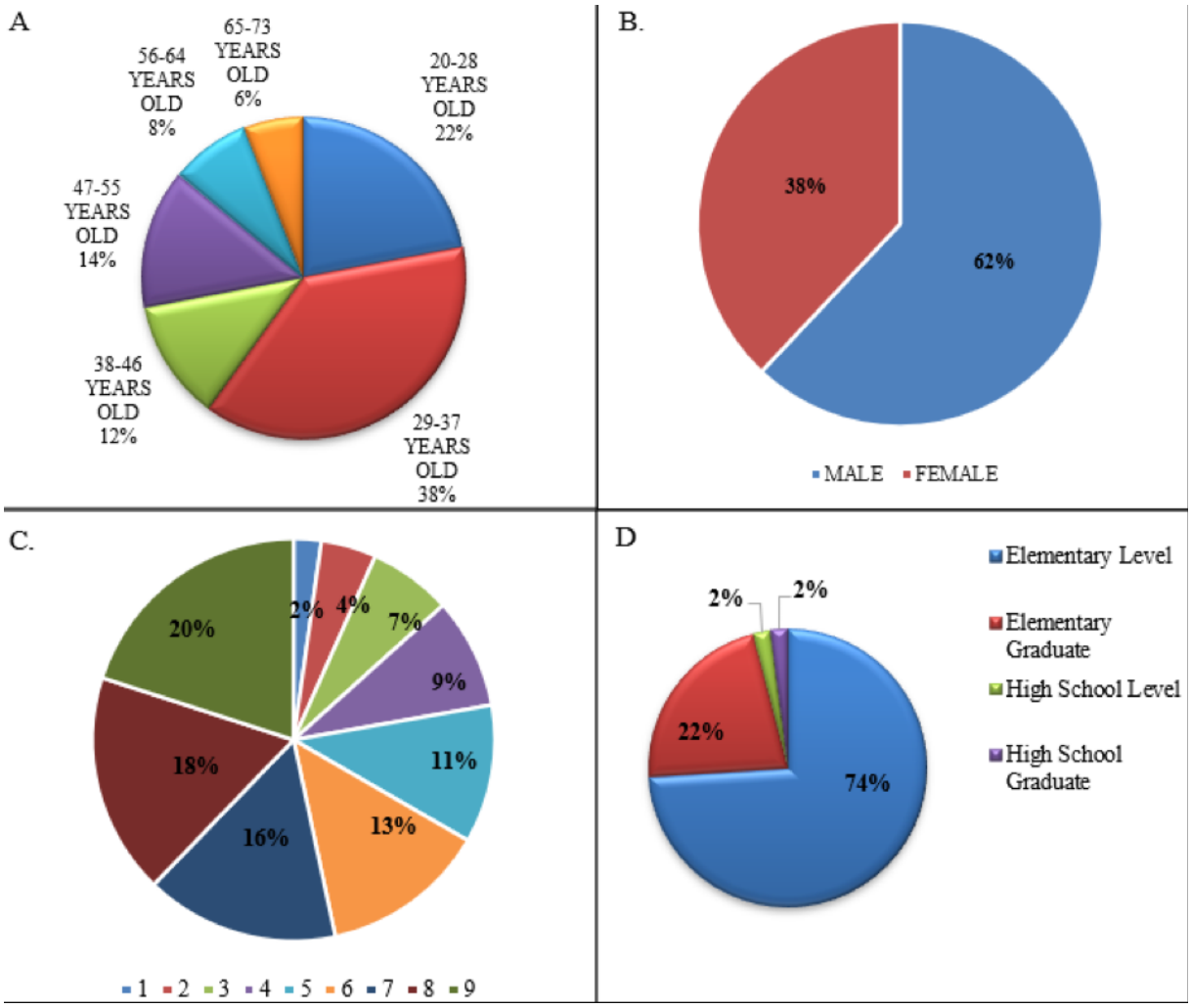

Figure 2. A—Age | B—gender | C—number of siblings | D—level of education of the respondents.

(60%) have a monthly income of below PHP 3,000.00 followed by those who earned PHP 3,001.00–PhP 7,000.00 (36.0%) monthly, whereas 4.0% had an income of PHP 7,001–11,000 per month. Moreover, none of the respondents in Datal Bad earned more 11,000 pesos a month.

Common activities of the locals in Datal Bad

The several activities of the locals in Datal Bad in relation to Philippine warty pig is presented in Table 3. Respondents confirmed that they are doing activities that posed threat to Philippine Warty Pig. They always hunt for food, medicine or even as pet. As part of the tradition and local belief of the respondents, having the Philippine warty pig as pet will make them famous as these animals were very rare. Although, they already knew laws of the government in protecting wildlife, but they don't follow the policies and did not practice on how to conserve Philippine Warty Pig. Due to poverty and their need for food, some of them lead to hunt wildlife resources present in the area and even sometimes they leave waste inside the forest. These may be because of no strong existing policy or ordinance in local adapting national laws in protecting wildlife. The respondent's involvement in hunting and disregarding the policies set by the National Wildlife Conservation clearly demonstrate that the local community lacks effective wildlife conservation practices.

According to the community the diversity indices of wildlife of Datal Bad are high. In spite of this, possible threat and disturbances due to human activities might hamper Philippine warty pig population and diversity of the area in general. Some practices such as military visits, excessive & unregulated tourism, and hunting might affect its population. Also, the application of chemicals to minimize the population insect pest for

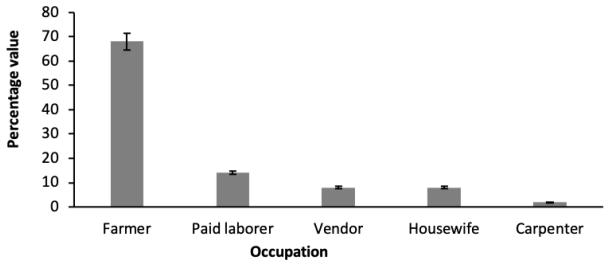

Figure 3. The socio-economic characteristics of the respondents in terms of their occupation.

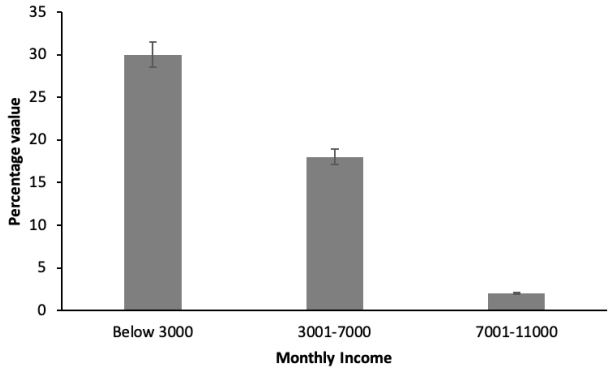

Figure 4. The socio-economic characteristics of the respondents in terms of their monthly income.

farming are likely to affect the current population and species composition in the forest of Datal Bad.

The researcher interviewed 50 respondents and 94.0% of them said that they were willing to work with Municipal Environmental and Natural Resources Office (MENRO), researchers, and academic institutions to manage well, protect, and to conserve warty pigs in the area and 4.0% are not willing. Also, only 2.0% was undecided to work with MENRO. In consonance to this, the respondents needed the government support, concrete road, policy enhancement, and the support from the community to make local conservation practices towards Philippine Warty Pig to be sustainable and to stop it from extinction. The locals' practices and reported disturbances might be an implication for future conservation plans in the area. Indeed, there is a need to further educate all locals and work with local barangay officials to ideally stop, or at least reduce the level of disturbance in the forest.

Knowledge and Awareness of the Locals on Philippine Warty Pig

Table 4 shows the knowledge and awareness of the respondents about Philippine Warty Pig in the area.

Table 2. Scoring guide in the analysis of the responses of respondent's common activities relating to Philippine Warty Pig.

Range of means	Scale	Description	Interpretation
3.3–4.0	4	Always	Indicators relating to common activities on Philippine warty pig are always observed.
2.5–3.2	3	Most of the time	Indicators relating to common activities on Philippine warty pig are oftentimes observed.
1.8–2.4	2	Sometimes	Indicators relating to common activities on Philippine warty pig are moderately observed.
1.0–1.7	1	Never	Indicators relating to common activities on Philippine warty pig have never been observed.

Respondents were highly aware of Philippine Warty Pig in the area. On the other hand, respondents were aware on associated conservation policies formulated by MENRO and the Barangay Council, services and benefits of Philippine Warty Pig , local conservation practices, and prohibitions. They were also aware of human activities that pose threats on Philippine Warty Pig . The results contrasted with the findings in the study conducted by Hassan et al. (2015) wherein respondents, especially farmers are unaware of the ecological services rendered by Philippine Warty Pig and reflected a negative attitude towards them. However, a greater percentage of the respondents in the same study positively responded to the policies and recommendations towards conservation. This linked to the idea of Hassan et al. (2015) that lack of ecological awareness seems to be the major impediment in wildlife conservation and results to a mass persecution of wildlife especially Philippine Warty Pig that may lead towards local extinction of these organisms in the future, and as well as the educational background and ecological literacy of an individual (Kellert & Westervelt 1984). Prior to the widespread of wildlife conservation education and awareness program, a vast majority of people also had similar beliefs about wildlife.

These beliefs on Philippine Warty Pig were, however, less prevalent. The educational attainment of the respondents indicates that conservation education can further convey awareness among the people, promotion of non- consumptive wildlife-oriented tourism and can serve as tool to halt mass persecution of Philippine Warty Pig.

Conservation Threats

The human activities in Datal Bad which may cause threats and disturbance to Philippine warty pig is

Table 3. Common activities of the locals in Datal Bad, West Lamidan, Don Marcelino, Davao Occidental.

Benchmark statement	Mean response	Mode	Qualitative description
1. Went to the forest	2.92	3	Most of the time
2. Hunt Philippine Warty Pig in the forest	2.90	3	Most of the time
3. Sold Philippine Warty Pig in the market	2.82	3	Most of the time
4. Hunting or persecution of Philippine Warty Pig	2.60	3	Most of the time
5. Hunting Philippine Warty Pig for pleasure	2.36	2	Sometimes
6. Make Philippine Warty Pig as food	3.42	4	Always
7. Make Philippine Warty Pig as medicine	2.66	3	Most of the time
8. Sold Philippine Warty Pig in the market	2.84	3	Most of the time
9. Make Philippine Warty Pig as a pet	2.62	3	Most of the time
10. Destruct Philippine Warty Pig habitat	2.68	3	Most of the time
11. Making or creating noise inside/beside the forest	2.70	3	Most of the time
12. Leave waste inside the forest	2.08	2	Sometimes
13. Follow wildlife protection policy	2.78	3	Most of the time
Overall mean	2.72	3	Most of the time

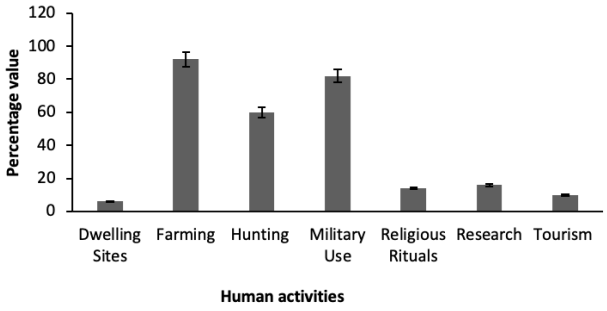

Figure 5. Human activities which may cause possible threats and disturbances to Philippine Warty Pig .

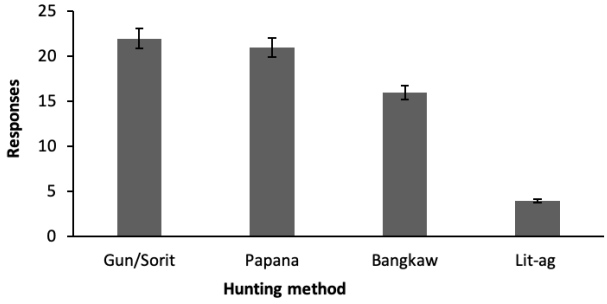

Figure 6. Philippine warty pig hunting method practiced by the locals.

presented in Figure 5. It depicted that, most of the time, forest was used by the community for farming which accounted 92.0%. On the other hand, the forest was used by the military as dwelling place (82.0%). Although policies and fines were already in place for wildlife protection, hunting and retaliation (60.0%) are still happened and with the number of wildlife present in the area, researchers were conducting studies using the forest as their sampling site. Other activities included religious rituals and other activities (14.0%) while tourism and recreations accounted 10.0%. These activities were done inside or near the habitat of Philippine wart pigs which may directly or indirectly disturb and may be considered threats to the Philippine Warty Pig population.

Concordance to the findings of Cardiff et al. (2012), farming, military, and tourist can pose a threat to Wildlife population as they can disrupt Philippine Warty Pig activities. Philippine Warty Pig avoid human which could reduce their feeding time and avoidance of prime feeding areas that are used by human can have a negative effect on their energy balance (Buckley 2004). Even if the goal of conducting research is good, it brings harm to Philippine Warty Pig in the sampling area in some ways. Research activities like staying overnight for specimen collection, using of flashlights, and creating noise like religious activity can cause disturbance to the Philippine Warty Pig in the area. Hunting and retaliation of Philippine Warty Pig species and consumption also occurred in the area.

Based on the survey, one of the respondents said that some group of people, indigenous groups, usually hunt Philippine Warty Pig in the area and they sell it at a price of 200 pesos per kg. This conformed to the findings of Mildenstein (2002) who reported that some indigenous tribes in the Philippines believed that

Table 4. Knowledge and awareness of the locals in Datal Bad on Philippine Warty Pig.

Variables	Mean response	Mode	Description
1. I am aware that there are Philippine Warty Pigs in our area.	3.62	4	Highly aware
2. I am aware that there are Philippine Warty Pigs near our barangay that we are not allowed to hunt.	3.24	3	Aware
3. I have received information about Philippine Warty Pig conservation.	3.32	4	Highly aware
4. I am aware how to conserve Philippine Warty Pigs.	3.38	4	Highly aware
5. I am aware that there are efforts from the local government to conserve Philippine Warty Pigs.	3.30	4	Highly aware
6. I am aware on an act protecting the Philippine Warty Pig passed by the government.	3.22	4	Highly aware
7. I am aware of MENRO and Barangay policy about Philippine Warty Pig conservation.	3.22	3	Aware
8. I am aware that human activities have significant impact on Philippine Warty Pig population.	3.12	3	Aware
9. I am aware about the services and benefits that rendered by the Philippine Warty Pig.	3.02	3	Aware
10. I am aware on the different program about Philippine Warty Pig conservation.	3.06	3	Aware
Overall Mean	3.25	3	Aware

Philippine Warty Pig meat is a good source of protein. In Carolina Islands of the Federated States of Micronesia, wild boar species are part of a high valued delicacy, traditionally eaten during celebrations. It is commonly hunted opportunistically as a novel supplemental food source (Food and Agriculture Organization of the United Nations 2011).

Extensive farming in the area poses a great threat and disturbance in warty pig fauna. In addition, worldwide, agriculture a major impact on many habitats. The increasing human population has meant ever increasing demands on agriculture to produce more food. In many countries, this has led to a change from traditional to more intensive agricultural techniques, with greater use of artificial chemicals as fertilizers & pesticides and many habitats have been lost through expanding and developing more efficient agricultural systems (Esselstyn et al. 2004). Racey (2003) stated that the increasing use of land for agriculture have been associated with extensive loss and fragmentation of natural habitats and, frequently, the degradation of remaining habitats. Major threats to Philippine Warty Pig populations worldwide are the loss of natural habitats which resulted from modification and fragmentation due to agricultural development.

Most of the results were merely similar to the findings of (Villegas et al. 2023) that most of the threats on wildlife in the Philippines are due to lack of strong policies or protection, increased demand for recreational sites, treasure hunting, mining, pollution, illegal collection of cave resources, and rapid urbanization.

Hunting Method

The mode of Philippine Warty Pig hunting in the locality includes the following: solitary, by pair or in group. Most of the respondents went Philippine Warty Pig hunting in groups. According to them, group hunting was much more ideal compared to solo or by pair since there are more individual who can help in sighting possible Philippine Warty Pig . Additionally, they prefer group hunting because this group hunters were commonly relatives or a member of a single family. The family members tend to hunt during their most convenient time and if there was a report of Philippine Warty Pig sightings in the area. This result was in consonance with the study of Stegeman (1938) who reported that hunters do not follow fixed hunting schedule but hunted when convenient. Although, some hunting trips are carried out for cultural or ritualistic reasons may follow a schedule, for example during village festivals and functions. Some hunters are doing this trip because they are craving as it their viand.

In Figure 6, the multiple response of respondents relative to hunting activities they used is presented such as gun/sorit (22 responses) as their tool in hunting and is the mostly used, followed by papana (21 responses) whereas bangkaw and lit-ag have 16 and four responses, respectively. These different hunting methods are also practiced in other areas for hunting wildlife (Aiyadurai et al. 2010). Trapping methods were also practiced including bows and arrows and spears but not blowguns. The indigenous methods documented were stone-fall, trigger-and release, canopy, spring-pole, gun, metal noose, hanging stone, pitfall, box, log-fall, and rodent traps. Also, in the results gathered by the study of Johnson (2005) found out that guns were the most common method reported for capturing most wildlife, other tools for hunting include snares and bows. More

than half of total responses for hunting methods across all animals were guns, followed by papana, bangkaw, and lit-ag.

Wildlife Use and Consumption

It was found out that hunted Philippine Warty Pig were commonly consumed for food, fairly used as pet, and rarely practiced for trading due to the awareness of law in protecting wildlife. This finding revealed wildlife specifically the Philippine Warty Pig and fish made up an average of 66% of protein source. Interviewers observed that relatively small amounts of meat were consumed per individual per meal, but that meat was often present. Also, as stated by Bennett & Robinson (2000) human population density is high. Population depends on wildlife for its major source of protein. In relation to this, the study conducted by Rao et al. (2005) wild fish appeared to be the most prevalent source of animal protein relative to wild or domestic meat (livestock). Proteins are considered as part of the dietary components of hunters as they consumed.

Mostly in the study sites, Philippine Warty Pig was used in tradition, for medicine, and rarely used in religion and others. Stegeman (1938), explained the preference for wild meat was reportedly based on taste. People believed that wild meat is not contaminated like the meat of domestic animals that villagers refuse to eat. Majority of the respondents hunted Philippine Warty Pig for personal consumption, while others hunted for recreation, trade, and retaliation. Such findings are like the study of Stegeman (1938) which reported in Arunachal Pradesh, northeastern India Mishmi, Myers (2000) reported food as the main reason for hunting, followed by money, rituals/customs, and interest in hunting and retaliatory killing of crop-raiding animals. Cash income was an important reason for hunting by Myers (2000). Also, according to Nijhawan & Mihu (2020) (22 responses) reported ritual as the main inspiration for hunting.

CONCLUSION

Majority of respondents are in the age bracket of 29–37 years old and males are more aware in Philippine Warty Pig in the area. Poverty and lack of permanent jobs are the major drivers for illegal hunting of the Philippine warty pig in the vicinity. Several indigenous people in the community were observed to be violators of national and local policies. Meanwhile, the community are aware of the highly diverse wildlife and the presence of the Philippine Warty Pig in their locality. Though there are national policies to address the declining number of Philippine Warty Pig and other wildlife, there are various local practices, cultural beliefs, and tradition that possess threats and disturbances to the already vulnerable Philippine warty pig population in Datal Bad. Further, continuous occurrence of various local threats and disturbances in Datal Bad can lead to the local extinction of the said species. Therefore, a strong information drive campaign and the establishment of local policies that was specific to the conservation of Philippine Warty Pig is necessary. In addition, community-based wildlife conservation management is also important to directly involved local communities in the preservation and protection of the vulnerable Philippine Warty Pig. These actions are very essential since the community in Datal Bad specifically those who hunt Philippine Warty Pig are very open and willing to be involved in conservation, protection, and research activities which could positively impacts Philippine Warty Pig population.

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Appendix I. Survey questionnare (Modified from: Sedlock (2010).

PHILIPPINE WARTY PIG AWARENESS AND CONSERVATION PRACTICES IN SITIO DATAL BAD, WEST LAMIDAN

A. Socio-demographic Profile of the Respondents

Name (optional): _____ Age: _____
Number of Siblings: _____ Gender: _____
Educational Attainment:

( ) Elementary Level
( ) Elementary Graduate
( ) High School Level
( ) High School Graduate
( ) College Level
( ) College Graduate
( ) Vocational Graduate

Occupation/Sources of Income

( ) Farmer
( ) Paid laborer
( ) Vendor
( ) None
( ) Other Sources: _____

Monthly Income/Month: _____

B. Knowledge on Philippine warty pig

Please indicate how much you aware or unaware with the following statements about Philippine warty pig conservation by tick (√) one box on each row.

4: Highly aware 3: Aware
2: Unaware 1: Highly Unaware

Particulars		Highly Aware	Aware	Unaware	Highly unaware
		4	3	2	1
1	Are you aware of Philippine warty pig in your area?				
2	Are there Philippine warty pig near your barangay that you are not allowed to hunt?				
3	Have you received information about Philippine warty pig conservation?				
4	I am aware about on how to conserve Philippine warty pig?				
5	I am aware that there are efforts from the local government to conserve Philippine warty pig?				
6	I am aware on an Act Protecting the Philippine warty pig /Wildlife passed by the government?				
7	I am aware of MENRO and Barangay policy about Philippine warty pig Conservation.				
8	Human activities have significant impact on Philippine warty pig Conservation				
9	I am aware about the services and benefits that rendered by the Philippine warty pig				
10	I am aware on the different program about Philippine warty pig conservation.				

C. Awareness on Philippine warty pig

1. How many Philippine warty pigs are there in your area? Please Specify_____
2. Is there Philippine warty pig near your barangay that you are not allowed to touch?
   ( ) Yes
   ( ) No
   Why_____
3. How many Philippine warty pigs did you see in the forest when you visited?
   ( ) None
   ( ) Few (less than 50; individuals were scattered throughout the forest)
   ( ) Many (hundreds of Philippine warty pig)
   ( ) A lot (thousands of Philippine warty pig)
4. What is the largest number of Philippine warty pig you have seen in a forest?
   ( ) No forest experience
   ( ) 0–10
   ( ) 10–100
   ( ) 100–1,000
   ( ) 1,000–10,000
   ( ) 10,000+

5. How does this number of Philippine warty pig compare to what you saw in the forest during the Ramos presidency (between 992–1998)?
   ( ) I/we did not visit the cave then
   ( ) Less
   ( ) Same
   ( ) More
   ( ) Not applicable (e.g., too young)
6. Do you think the community should do anything to regulate Philippine warty pig hunting?
   ( ) Yes
   ( ) No
   How? _____
7. Did you follow these recommendations?
   ( ) Yes
   ( ) No
8. Did you follow the community management guidelines?
   ( ) Yes
   ( ) No
9. Philippine warty pig in your area.
   ( ) Still abundant
   ( ) Decreased

D. Common activities of the locals in Datal Bad, West Lamidan, Don Marcelino, Davao Occidental

The following are the list of activities that you may do, for each one that you do regularly. Please tick (√) one box on each row.

4: Always 3: Most of the time
2: Sometimes 1: Never

		Highly Aware	Aware	Unaware	Highly unaware
		4	**3**	**2**	**1**
1	Did you perform activities in forest?				
2	Hunt Philippine warty pig in the forest				
3	Sold Philippine warty pig in the market				
4	Hunting or persecution of Philippine warty pig				
5	Hunting Philippine warty pig for pleasure				
6	Make Philippine warty pig as food				
7	Make Philippine warty pig as medicine				
8	Sold Philippine warty pig in the market				
9	Make Philippine warty pig as a pet				
10	Destruction of Philippine warty pig habitat				
11	Making or creating noise inside/ beside the forest				
12	Leave waste inside the forest				
13	Follow Wildlife protection policy				

1. How you do you use the forest?
   ( ) Tourism and Recreation
   ( ) Religious purposes/rituals
   ( ) Collecting Philippine warty pig for food
   ( ) Others: _____
2. In the last six (6) months (In a typical six months), how often did you visit the forest for other purposes?
   ( ) Never
   ( ) Once
   ( ) Weekly
   ( ) Monthly Other: _____
4. Philippine warty pig Use/Perception/Beliefs
   ( ) Medicine
   ( ) Tradition
   ( ) Religion
   ( ) Philippine warty pig as pest
   ( ) Other use_____
5. Would you be willing to work with researchers and MENRO personnel to help manage Philippine warty pig in your area?
   ( ) Yes
   ( ) No

6. What would you need to manage the forest in a reliable fashion?

D. Local Threats and Disturbances to Philippine warty pig

1. Activity near the forest site.
   ( ) Quarrying
   ( ) Kaingin or charcoal mining
   ( ) Farming
   ( ) Construction
   ( ) Waste disposal or other land fill
   ( ) War
   ( ) Others_____
2. Entry to forest and other utilization.
   ( ) Military use
   ( ) Religious observances
   ( ) Dwelling sites
   ( ) Farming
   ( ) Hunting or retaliation
   ( ) Research
   ( ) Tourism and recreation
   ( ) Others_____
3. What hunting method do/did you use? _____

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