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Applying Green Criminology to Explain Wildlife Trafficking in Thailand.

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Green criminology is an approach used for proving and resolving various environmental crimes. This article aims to present how green criminology can be applied to explain the wildlife trafficking phenomenon in Thailand. In this research, a documentary study was employed, and in-depth interviews were conducted with 58 key informants who had been involved in the prevention and suppression of wildlife trafficking. The findings revealed that wildlife trafficking in Thailand had produced negative impacts in three dimensions: (1) 'impacts on humans and society' by which the way of living for Thai people has changed due to relocation for food, the prevalence of wildlife diseases, insecurity in their lives created by crime related to wildlife trafficking, loss of taxes collected from the legal wildlife trade and a ruined image and reputation in the eyes of the CITES members; (2) 'impacts on wildlife' by which Thai wild animals were constantly hunted, injured, threatened and infected by foreign wildlife diseases, and; (3) 'impacts on environment and ecosystems' by which Thai ecosystems where wild animals had been hunted, killed and destroyed for wildlife trafficking lost their balance, affecting neighbouring ecosystems and other ecosystems as well. Therefore, humans and society, wildlife, and the environment and ecosystems are all victims of the wildlife trafficking happening in Thailand, based on the concept of green criminology.

Key words: *Green Criminology, Wildlife, Trafficking, Crime.*

Introduction

The global environmental situation in the past three to four decades has demonstrated that human activities have become more complex and rapidly deteriorated the world's environment (Laosillapacharoen, Tanaboriboon & Jermsittiparsert, 2019; Phrakhruopatnontakitti, Watthanabut

& Jermsittiparsert, 2020). According to a global survey ranking the world's top three environmental issues in 2019, it was found out that climate change was the most concerning environmental problem (Nichols, 2019). That the greenhouse effect is caused both by the nature and human beings, leading to the rise of global temperature uniformly confirmed by 97% of climate change scientists (Samenow, 2013). The second most concerning environmental issue was the deterioration of ecosystems and pressure on endangered species. It was predicted that by 2050, one-tenth of the wild animals and plants worldwide will be extinct, while the list of wild animals and endangered species will be shortened owing to the loss of habitats (Nichols, 2017; Brown, 2004). Deforestation was the third most alarming problem. It was found that every minute a plot of forest the size of twenty football-pitches is destroyed, and by 2030 the amount of rainforest will decrease by 90%; this was estimated to result from cutting trees in order to manufacture products or cultivate crops (The World Counts, 2019). Even though the extinction of ecosystems and endangered species was ranked as the second most concerning worldwide environmental issue, the damage caused by this problem was as tremendous as that of other kinds of environmental problems, especially in terms of wildlife trafficking, a transnational crime found in all continents (Walter, Westerhuis and Wyatt, 2013: 72). Hence, wildlife trafficking is considered an urgent issue that should be solved in order to protect and preserve wildlife from human threats as well as to prevent other types of co-existing crimes, such as transnational crime, organised crime, economic crime, terrorism, corruption and money laundering. As Africa and Asia are still abundant with natural resources, many criminals target these areas in order to exploit wildlife without considering the consequences on humanity (United Nations on Economic and Social Council, 2002: 6).

In the same manner, Anh Cao Ngoc and Tanya Wyatt (2013: 129 - 142) revealed that wildlife trafficking had become a major crime damaging and impacting Vietnamese people, due to: 1) the human-centric attitudes which do not recognise the environmental rights ensuring the protection of natural resources and the survival of all Earth's inhabitants; 2) the belief/value of wildlife consumption; 3) rapid economic growth; and 4) weak institutions and lack of enforcement of environmental laws. According to Mara Zimmerman (2003: 1657-1690) and Greg Warchol (2004: 57-63), wildlife trafficking in many aspects is a threat to the environment as well as a threat to national security. Criminal organisations in China, Hong Kong, Japan, Italy and Russia, such as the Wo Shing Wo Group, 14K and the Japanese Yakuza, are all using their power and violence to maintain wildlife trafficking in order to pursue financial benefits. Furthermore, the capacity of governmental agencies regarding law enforcement against transnational crimes is relatively low, while the demands for wildlife in both domestic and international markets keeps increasing. In order to respond to the demand, wildlife trafficking has become an illegal business which generates massive profits for the offenders. Additionally, UNODC (2013: 1-4) evaluated the threat of transnational, organised crimes in East Asia and the Pacific and discovered that between 2003-2013, the cost of the damage caused by wildlife trafficking in the Asia-Pacific

region was estimated at 2.5 billion USD or 10 million USD per year on average, marking it as the third biggest illegal trade next to illegal drugs and weapons.

In terms of wildlife resources in Thailand, wild animals are a kind of natural resource that have been threatened and tremendously destroyed within a short period of time. Consequently, it is too demanding for nature to adequately reproduce new resources and bring the balance back. Moreover, the forest areas which used to be wildlife habitats have been decreasing due to economic development projects and urbanisation, causing some wild animals in Thailand to become endangered or extinct (Office of the National Environment Board, 1990: 2–3). As stated in an annual budget report from the Department of National Parks, Wildlife and Plant Conservation, birds, pangolins, turtles, snakes, monitor lizards, crocodiles, lizards and frogs were the most trafficked wild animals between 2001-2006. In the fiscal year of 2016, there were 288 cases involving wildlife, comprising of 8,044 trafficked wild animals and 687 trafficked carcasses of wild animals (Forest Protection and Fire Control Office, 2018).

Wildlife trafficking not only crucially affects Thailand's natural resources and ecosystems but also its national security and citizens. The international arena perceives Thailand as a main source-transit-destination country of wildlife trafficking in South East Asia, particularly on the Thai-Laotian, Thai-Burmese and Thai-Malay borders; the trafficked wildlife and their carcasses are regularly delivered to other destination countries such as Vietnam and China (Maneesai, 2014). A study conducted by Chris, Jeet and Serge (2004: 12–16) reported that Bangkok is a destination for wild bird trafficking, especially black cockatoos from the merchants in Medan, a huge wildlife market in Sumatra, Indonesia. Vincent and Chris (2015: 3–6) also affirmed that Thailand is a hub for the global wildlife trade. In particular, turtles and other wild animals were widely trafficked and openly sold in many markets, including the Chatuchak Weekend Market. According to the BBC news agency, on 4 June 2016, officers of the Department of National Parks, Wildlife and Plant Conservation discovered 40 carcasses of cubs alongside the carcasses of bearcats, cow horns, deer antlers and some unknown pickled animal organs inside the Tiger Temple, Kanchanaburi Province (BBC, June 4, 2016).

Green criminology is an approach developed by Michael Lynch during the 1990s when the global environment was staggeringly threatened and destroyed. This approach aims to resolve the environmental crimes committed by human beings and mitigate the damage on natural resources and the environment, in order to sustain them for future generations. This article proposes its research question on how green criminology could be applied to explain the wildlife trafficking phenomenon in Thailand, which would further demonstrate how green criminology, as a vital knowledge set, can solve wildlife trafficking problems impacting the public, society and Thailand as a whole, and how it can prevent and suppress environmental and natural resources crimes in Thailand.

Green Criminology

Green criminology is the study of environmental crimes, their trends, patterns and human behaviours influenced by other external factors, based on a human-centric approach. It is a discipline developed from the positivist school by which scientific methods are employed to find the causes of crimes in society (Lynch, 1990: 2). Simultaneously, green criminology is also interdisciplinary as it integrates the science of law and sociology together, in order to understand environmental crimes more extensively. It was influenced by the critical and radical criminological school which aims to study the causes of destruction and social harm towards crimes and social responses to the problem (Hall, 2014: 96-109). Michael Lynch coined and developed green criminology in the 90s, when the worldwide environment and natural resources began being heavily jeopardised. Lynch believed that traditional criminology could not clearly explain environmental crimes and its criminals, due to the fact that environmental crimes in each area have their own distinctive characteristics, affecting the interpretations of the causes and effects of environmental crimes under the following notion: "Whoever or whatever damaged or harmed [it] might not be able to manage or respond to the damage by themselves" (White, 2010: 411). Furthermore, traditional criminology only explains how humans are the victims of crimes in order to prosecute, rehabilitate and change the offenders' behaviors, while environmental crimes directly victimize natural resources and the environment, so it is difficult to find the causes and solve the environmental crimes effectively and sustainably (Lynch and Stretesky, 2014: 2-6; White, 2008: 3-5). In addition, Rob White (2013: 17–33) supports that green criminology studies the damage produced by environmental crimes by applying both traditional and modern approaches in order to cope with the current situations; it also promotes the participation in prevention and suppression of environmental crimes from different sectors. That is to say, green criminology is already beyond the traditional criminological approach which focuses on basic offenses by emphasising the damage created by human beings on the environment and natural resources, which are the direct victims (Chaiakaraphong, 2019: 49-50).

Therefore, when an environmental crime occurs (for instance, deforestation, discharges of wastewater into a river/sea, wildlife trafficking), the damage they constituted is assessed based on the weighing up harm approach developed by White and Watson (White, 2008: 24). In the field of green criminology, it is significant to clearly distinguish and identify the damage on victims, and then analyse the impacts on the victims in order to provide justice to those who are directly and indirectly affected by environmental crimes. The damage of environmental crimes is classified into three groups: human beings, ecosystems and non-human beings/species. Considering the damage on each type of victims, there are three analytical frameworks explaining the damage of environmental crimes based on the green criminology approach as described below.

(1) The human-centric approach refers to how the damage of environmental and natural resources crimes is analysed based on the human-centered perspective. This approach proposes that all human beings have 'environmental rights' or the rights to exploit natural resources in order to survive or sustain their quality of life. If a person cannot get access to natural resources, it means that person does not obtain environmental justice. In other words, any action hindering these environmental rights is considered as an environmental crime based on the human-centric approach (Chaiakaraphong, 2019: 45-46).

(2) The ecosystem-centric approach refers to the analysis of the environmental damage focusing on ecosystems as the centre. This approach proposes that an ecosystem comprises of different components, including humankind, animals, natural resources and the environment. If a component is damaged or deteriorated, others will be affected as well, in order to maintain the interlinked relationships and the balance in cycles of the ecosystem. Every organism in the ecosystem has the right to co-existence, safety and freedom from the destruction or intrusion which could lead to an imbalance in the ecosystem. If the ecosystem, which is the centre of all relationships on Earth, is devastated, the ecosystem does not receive ecological justice. This problem is the main reason why the laws on forest, plant and wild life protection are implemented; for example, the rights given to environmental organisations to sue and fine persons who destroy forests, plants and wildlife or those who trespass on national parks (Muanpawong, 2007: 269–287).

(3) The species-centric approach refers to the analysis of the environmental damage focusing on the wildlife as the centre. This approach proposes that wildlife is a kind of living thing that is equal to human beings and is a part of the world's environment. Every wild animal has animal rights, which are the rights to living, existence, safety and protection from hunting, torture, illegal exploitation and discrimination, the same as for humankind. If these rights are violated (for example, they are hunted, tortured or their habitats are taken away), it can be implied that they do not receive species/animal justice. As a result, laws and regulations are implemented to protect animal rights to prevent animal exploitations (Chaiakaraphong, 2019: 46).

In brief, the analysis of the damage based on green criminology should be mainly either ecosystem-centric or animal-centric, but it still needs to consider the relationships between humans, ecosystems and animals, too. This is because human beings, natural resources and the environment all co-exist in a complex web of relationships, which is a system where living things and non-living things exchange matter, elements and energy sources; this complex system in a certain area is a so-called ecosystem (Songsunthornwong, 2010: 22-33). This indicates that living things cannot be separated from the environment and, thus, any problem in an ecosystem shall impact upon living things in the ecosystem. Generally, in this complex system, whenever the environment changes, living things will adapt themselves to the changes. If the nature has a high level of diversity, it is highly possible to have alternative

choices, but if humans threaten, destroy and overuse natural resources, this balance will vanish (Songsunthornwong, 2010, 65-66).

According to the green criminology approach, there are three main dimensions showing the impacts of environmental crimes, which are the impacts on wildlife, the impacts on humans and society, and the impacts on environments and ecosystems. This article, therefore, aims to explore wildlife trafficking in Thailand by focusing on three dimensions: impacts on wildlife, impacts on humans and society, and impacts on environments and ecosystems, as a framework for understanding wildlife trafficking in Thailand based on green criminology.

Methodology

This article is based on qualitative research by using data gathering, comprised of two approaches: (1) document study and (2) in-depth interview. The documentary study used secondary data in Thai and foreign languages from credible sources about Green Criminology and wildlife trafficking such as books, academic articles, research articles, thesis, journals, statistics of related organisations, etcetera. The in-depth interview used a semi-structured interview as a research tool. Wildlife trafficking in Thailand is a new type of crime that has occurred in the country. There are many complications that revolve around wildlife trafficking. For this reason there are officers that are personnel for the managing department and operation department/government organisations, as well as professionals that have technical knowledge of and about protecting wildlife and suppressing wildlife trafficking throughout Thailand. Thus, key informants were selected through purposive sampling first, and then through snowball sampling following the suggestions from the purposive key informants. There are 58 key informants. They are drawn from five major groups:

1) The academic professionals/researchers who are expert in the wildlife trafficking problem, environmental/ wildlife management as well as environmental crime, consisting of seven individuals.
2) The government officers consisting of 25 individuals from the Department of National Parks, Wildlife and Plant Conservation (DNP), the Thai Royal Police, Thai Customs, the Anti-Money Laundering Office and veterinarian hospitals.
3) The non-government officers consisting of twelve individuals from the Seub Nakhasathien Foundation, the United States Agency for International Development (USAID), the World Wildlife Fund (WWF) Thailand, the Freeland Foundation Thailand, the United Nations Office on Drug and Crime (UNODC) Regional Office for Southeast Asia and the Pacific.
4) The Media sector (news reporters on natural resources and the environment) consist of six individuals from Channel 3 News, as well as TNN 24 Spring News channels.
5) The public sector (ex-offenders in wildlife trafficking cases, wildlife sellers, wildlife hunters, community leaders who protect wildlife), consisting of eight individuals.

For the data analysis, the research employs a content analysis using a theme analysis approach, derived from reviews of information so as to make important choices and decisions.

Results

According to the documentary research and the interviews with key informants, after classifying the findings, it was found that wildlife trafficking in Thailand impacts the country in three ways, impacting on wildlife, impacting on humans and society, and impacting on environment and ecosystems, as explained below.

The Impacts on Humans and Society (divided into six aspects)

1.1 Local people in the wildlife trafficking areas are relocated or forced to migrate due to the lack of wildlife, wild plants and a rich environment, as wild animals are overly hunted and cannot reproduce fast enough to keep up with human demands. Consequently, the food chain and the ecosystem loses its balance, causing local people to move from the areas.
1.2 Local people who work in the wildlife-related industries become unemployed because wild animals, which are the important resources in their production processes, are trafficked or infected by alien animals, resulting in the reduction of labour or unemployment.
1.3 Thai people are exposed to wildlife-transmitted diseases caused by wildlife trafficking, such as SARS transmitted by cats, Monkeypox transmitted by monkeys, parrot fever and so on. Particularly, the spread of Avian Influenza in Thailand between January 2004 and 21 November 2005 constituted 21 H5N1 infection cases with thirteen deaths; the data shows that the death rate was as high as 62%. Even though there are currently no reports of deaths from Avian Influenza in Thailand, it is still necessary to constantly monitor the spread so that the related agencies could support patients and control the spread promptly.

“The flu which was raging all over the country several years ago, besides killing the number of wildlife such as birds and poultry of Thailand, it also killed people” (interview with government officer).

1.4 The insecurity of rights to life and property caused by wildlife trafficking also provokes a sense of disorganisation and lack of peacefulness in Thai society. This often results from corruption and other illegitimate behaviours of public officers, such as bribery, ignorance, cooperation with criminal organisations both inside and outside the country, and misuse of authority and power, especially by influential figures and powerful people in the local areas, who support wildlife trafficking. Moreover, there are also foreigners who illegally traffic and smuggle Thai wildlife alongside other illegal products, including weapons, drugs and other smuggled goods which actually require declaration or taxation before being transported

across borders. These criminals usually have high experience and expertise in various kinds of smuggling and trafficking. The World Bank confirmed that wildlife trafficking tends to be conducted together with weapon and human trafficking (The World Bank, 2005: 4).

"They have done in the form of the network with clearly dividing the works that who will be a transporter, a poacher, a lookout, a coordinator. Therefore, it is difficult for the officers to trace to the kingpin" (Interview with government officer).

"Sometimes if they cannot find Thai people to hunt or transport, they will hire people from neighboring countries like Lao people, Hmong people. They cross to hunt and deliver to the *investors or keep for themselves" (Interview with the scholars).*

1.5 In terms of economics, the state loses revenues gained from personal and business taxation as well as international trades. The Department of National Parks, Wildlife and Plant Conservation estimated that if Thailand is restrained from wildlife trade due to its violations of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), it will lose tens of billion baht, approximately. This amount of damage value composes of losses in the following sectors: 1) freshwater and saltwater crocodile leather goods, arowanas, seahorses, Amazon snakehead fish and others (2,200 million baht); 2) caiman leather goods, parrots, insects and snake skins (1,200 million baht); and 3) orchids, eaglewoods, aroid palms, euphorbia milii, cactuses, swamp ferns and palms (10,080 million baht). More importantly, Thailand would lose its wildlife market shares to other countries for 3-4 years (Department of National Parks, Wildlife and Plant Conservation, 2019: 1-11). The predicted loss of revenues could negatively affect the country's development as a whole, as well as citizens' quality of life, public infrastructure, public health and education and mean smaller budgets for governmental agencies.

"In 1991, we got the trade ban causing loss of tens of millions to billions of baht because we could not trade wildlife and wild plants with the CITES member States" (interview with scholar).

1.6 Politically, the international arena will not accept Thailand due to its violations of CITES. The country's reputation has been ruined owing to its relaxed enforcement against wildlife exploitation and trafficking, which also contradicts its CITES ratification. Once the member-states of CITES lose faith in Thailand, they will decide not to trade wildlife with the country. To illustrate, Thailand had been restrained from trading with other member-states under CITES by the permanent committee and the CITES Secretariat in 1991, until the secretariat affirmed that Thailand had enforced the CITES regulations effectively and practically. In 2015, Thailand was identified as a 'primary concern' by the CITES Secretariat for its high tendency of an illegal ivory trade. Afterwards, Thailand had been closely observed by the

CITES Secretariat, CITES member-states and other countries, who decided to postpone their trade with Thailand. This economic sanction and the stigmatisation as a primary concern country immeasurably impoverished Thailand's reputation regarding wildlife conservation.

"If not following CITES, Thailand will already face stress. When Thailand see many pressures, it causes poor reputation for Thailand. CITES Parties or partner countries will take time to order products because they have to see the attitude toward Thailand from other countries" (interviews with government officer).

The Impacts on Wildlife

A large number of Thai wild animals have been continuously hunted down, smuggled, killed, possessed and exported. Over the past eleven years (2009-2019), the Department of National Parks, Wildlife and Plant Conservation had seized a great number of exhibits, consisting of live wild animals, carcasses of wild animals and ivory. It was found out that there were 120,632 exhibits of wildlife seized during the given period of time, and starting from the first year until the final year, there were 6236, 11414, 30369, 16345, 10109, 8703, 10754, 13426, 4852, 7275 and 1149 wildlife exhibits seized each year, respectively. Among the seized exhibits were 57 tigers, 49 elephants and 4403 pangolins (Department of National Parks, Wildlife and Plant Conservation, 2019: 1-11). Furthermore, some local Thai wild animals were attacked and killed by foreign wild animals. Quite often, many wild animals' owners do not have enough knowledge or understanding about their pets, so when their pets grow up aggressively or require more portions of food, some owners do not want to continue raising them but rather decide to discard them in a forest without considering the ecosystem's conditions. Once these local wild animals are released into the forest where local Thai wildlife live, there is high possibility of cross-breeding between species which can lead to mutation of the local animals. Additionally, stronger alien animals can hunt down or transmit diseases to local animals, which can affect the forest's ecosystem and engender the extinction of traditional Thai animals. The smuggling or trafficking of foreign wildlife undetected by the epidemics control department increases their exposure to infections. To illustrate, in 2004, the spread of Avian Influenza in Thailand was accompanied by smuggled wild animals, causing some local Thai birds to become infected by the disease and die. Moreover, the disease also spread from animals to humans.

The Impacts on Ecosystems

Ecosystems usually collapse when wildlife trafficking exists; food chains become imbalanced due to the removal of some wild animals and the mass hunting or killing of some species. After the ecosystems deteriorate, the neighbouring ecosystems are also impacted. This kind of damage often continually expands. For example, the trafficking of Bengal tigers in

Thailand heavily affected its ecosystems because Bengal tigers were the main hunters in the food chain and responsible for controlling the number of herbivores. The absence of Bengal tigers allows the herbivores to overpopulate and consume too much food in the forest. If the food is all gone, these herbivores would not be able to survive either. This means Bengal tigers play a huge part in the survival of other kinds of living things in the ecosystem.

"You know that hunting just one tiger will cause the ecosystem in such area are screwed up. Since a tiger is a carnivore, which is apex predator of a food chain, so to think that if there is no tiger, there will be a lot of barking deer, deer, cows or herbivores in the forest to eat all of the plants" (interview with government officer).

Similarly, tigers, snakes, crocodiles, pangolins, deers and barking deers, which play a significant role in balancing the ecosystems in Thai forests, are vastly hunted, especially tigers. In the past decade, forestry officers have seized exhibits of 57 live tigers and 95 carcasses of tigers. In a forest where tigers are absent, overconsumption of resources is common, affecting the survival of wildlife and the ecosystem as a whole. Pangolins also hunt ants and other insects in the food chain, which helps prevent the overconsumption of certain wild plants in the ecosystem. Over the past ten years, forestry officers have seized exhibits of 4403 live pangolins and 118 carcasses of pangolins (Department of National Parks, Wildlife and Plant Conservation Conservation, 2019: 1-11). During 2014-2017, customs officers seized exhibits of 423 live pangolins and 6287 kilograms of pangolin carcasses (Thai Customs, 2018). In addition, one-fifth of live snakes, crocodiles, monitor lizards and lizards have been constantly seized as exhibits by forestry officers.

Discussion

According to the research question on how green criminology could be applied to understand the wildlife trafficking phenomenon in Thailand, the findings from the previous section reveal that there are three main dimensions of impact from wildlife trafficking in Thailand: impacts on humans and society, impacts on wildlife and impacts on the environment and ecosystems. These variables are considered as the victims of human activities, according to Lynch and Stretesky (2014: 2-6), White (2008: 3-5, 24) and White (2013: 17–33). In other words, wildlife trafficking in Thailand is an illegal activity which affects the way of life in Thailand in varying aspects, for instance, exposure to wildlife-transmitted diseases, insecurity in life and property due to other co-existing crimes, and the loss of national revenues. To clarify, the state may not be able to collect taxes from wildlife trade and international wildlife businesses. Above all, from the CITES member-states' point of view, the country has failed to maintain its image and reputation, based on the human-centric approach. At the same time, wildlife trafficking in Thailand remains a serious problem since Thai local wildlife is regularly hunted, trafficked, threatened and infected by alien animals. This reflects as violations of

animal rights by humans and alien animals imported into Thailand. These actions all aim to exploit animals to pursue self-interests, according to the animal-centric approach. By the same token, based on the ecosystem-centric approach, wildlife and their carcasses also play an important role in the food chain, so wildlife trafficking in Thailand over the past eleven years (2009-2019) enormously impacts the balance of Thai ecosystems as well as their neighboring ecosystems.

Conclusion

Green criminology is an approach suitable for analysing and solving environmental crimes, including wildlife trafficking in Thailand. According to this approach, it is necessary to conclusively examine the impacts of environmental crimes in three dimensions: impacts on humans, impacts on animals and impacts on the environment and ecosystems. This research has demonstrated that green criminology can explain the wildlife trafficking phenomenon in Thailand including how it affects wild animals, humans and the environment or the ecosystem entirely. Considering the impacts of these three dimensions based on this approach, it is possible to solve the wildlife trafficking problem directly and extensively. The green criminology approach can also support the responsible agencies to practically tackle the issue. Future research should investigate the resolutions on the impacts of wildlife trafficking in Thailand, in order to implement beneficial policy recommendations on the prevention and suppression of wildlife trafficking in Thailand. There should be the application of green criminology to other kinds of environmental crimes in order to prevent them in the future.

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REFERENCES

BBC News. 2016. Thailand Tiger Temple Operation 'Is Completed. Accessed August 20, 2016. http://www.bbc.com/news/world-asia-36451512.

Brown, P. 2004. An Unnatural Disaster. Accessed August 20, 2019. https://www. theguardian.com/science/2004/ jan/08/biodiversity.sciencenews.

Chaiakaraphong, N. 2019. "Environmental Crime: A Case Study of Wildlife Trafficking in Thailand." Ph.D.'s Thesis, Criminology, Justice Administration and Society, Mahidol University.

Department of National Park. Wildlife and Plant Conservation. 2019. Statistics on Statutorily Protected Wildlife and Their Remains as Exhibited during the Fiscal Years 2009-2019. Bangkok: Department of National Park, Wildlife and Plant Conservation.

Forest Protection and Fire Control Office. 2016. Division of Defense and Suppression. Accessed October 31, 2016. http://portal.dnp.go.th/Content/ProtectandFirecontrol? contentId=17927.

Hall, M. 2014. "The Roles and Use of Law in Green Criminology." International Journal for Crime, Justice and Social Democracy 3 (2): 96–109.

Laosillapacharoen, K., Tanaboriboon, T., & Jermsittiparsert, K. (2019). Environmental Factors That Influence the Agricultural Innovation: Evidence from Thailand. International Journal of Innovation, Creativity and Change, 7(2), 216-230.

Lynch, M. 1990. "The Greening of Criminology: A Perspective on the 1990s'." The Critical Criminologist 2 (3): 1–12.

Lynch, M. and Stretesky, P. B. 2014. Exploring Green Criminology Toward a Green Criminological Revolution. Farnham: Ashgate Publishing.

Maneesai, R. 2014. Summary of ASEAN Wildlife Enforcement Network (ASEAN-WEN) and Thailand Wildlife Enforcement Network (Thailand-WEN). Accessed August 20, 2016. http://www.dnp. go.th/thailand-wen/about_tw/pdf1/scan0021.pdf.

Muanpawong, S. 2007. Project of Public Policy Formation: Environmental Law. Bangkok: Rabi Bhadanasak Research and Development Institute.

Ngoc, A. C and Wyatt, T. 2013. "A Green Criminological Exploration of Illegal Wildlife Trade in Vietnam." Asian Journal of Criminology 8 (2): 129–142.

Nichols, M. R. 2017. Endangered Ecosystems and Species. Accessed August 20, 2019. https://schooledby science.com/endangered-ecosystems-endangered-species/.

Nichols, M. R. 2019. The Top 10 Environmental Issues Should Make You Worry. Accessed August 20, 2019. https://schooledbyscience.com/environmental-issues/.

Nijman, Vincent and Shepred, C. 2015. "Ongoing Trade in Illegally-Sourced Tortoises and Freshwater Turtles Highlight the Need for Legal Reform in Thailand." The Siam Society 61 (1): 3–6.

Office of the National Environment Board. 1990. Life Born in the Forest. Bangkok: Ministry of Science and Technology.

Phrakhruopatnontakitti, Watthanabut, B., & Jermsittiparsert, K. (2020). Energy Consumption, Economic Growth and Environmental Degradation in 4 Asian Countries: Malaysia, Myanmar, Vietnam and Thailand. International Journal of Energy Economics and Policy, 10(2), 529-539.

Samenow, J. 2013. 97 Percent of Scientific Studies Agree on Manmade Global Warming, So What Now?. Accessed August 20, 2019. https://www.washingtonpost.com/news/capital-weather-gang/wp/2013/05/17/97-percent-of-scientific-studies-agree-on-manmade-global-warming-so-what-now/.

Shepherd, C. R., Sukumaran, J. and Wich, S. A. 2004. Open Season: An Analysis of the Pet Trade in Medan, Sumatra 1997 – 2001. Selangor: TRAFFIC Southeast Asia.

Songsunthornwong, C. 2010. Man and Nature. 5th ed. Bangkok: Chulalongkorn University Press.

Thai Customs. 2018. Statistics on Arrest, Smuggling, and Customs Evasion Which Products That Violate the Convention on International Trade in Which Species of Wild Animals and Wild Plants during the fiscal year 2014-2017. Bangkok: Thai Customs.

The World Bank. 2005. Going, Going Gone: The Illegal Trade in Wildlife in East and Southeast Asia. Washington D.C.: The World Bank.