ISLAND STUDIES JOURNAL

Du, K., Liu, X., Shi, T., & Zhong, S. (2024). Chinese White Dolphins in the Anthropocene: Human-animal Relations Among the Islands of the Pearl River Delta. *Island Studies Journal*, *20*(1), 169–192. https://doi.org/10.24043/001c.122215

RESEARCH ARTICLES

Chinese White Dolphins in the Anthropocene: Human-animal Relations Among the Islands of the Pearl River Delta

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Keywords: Anthropocene, China, Chinese white dolphin, dolphins, human-animal relations, islands, Pearl River Delta

https://doi.org/10.24043/001c.122215

Island Studies Journal

Vol. 20, Issue 1, 2025

The Chinese white dolphin (Indo-Pacific humpback dolphin, *Sousa chinensis*) has become a symbol of China's Pearl River Delta in the Anthropocene. However, little scholarly attention has been paid to its role in the region's culture. This paper takes a human-animal relations approach to ask how and why this threatened species of dolphin rose to symbolic importance in a particular delta island geography within its vast range. The paper undertakes an exploratory literature review of historical and more recent texts concerning dolphins in China and more specifically Chinese white dolphins in the Pearl River Delta. These texts range from discussions of dolphin physiology, to religious associations with dolphins, to industrial-economic explorations, to illustrated children's books, to postage stamps and amusement park exhibits. They combine to show that Anthropocene processes have produced the Chinese white dolphin as symbolic of Hong Kong's reunification with China and ultimately for the cohesiveness of the Pearl River Delta crossborder region as a whole, even as these spatioeconomic developments have placed the species at risk.

Introduction

The Chinese white dolphin (also known as the Indo-Pacific humpback dolphin, *Sousa chinensis*) has become a symbol of China's Pearl River Delta in the Anthropocene. However, little scholarly attention has been paid to its role in the region's culture. This paper takes a human-animal relations approach to ask how and why this threatened species of dolphin rose to symbolic importance in a particular delta island geography within its vast range.

The paper undertakes an exploratory literature review of historical and more recent texts concerning dolphins in China and more specifically Chinese white dolphins in the Pearl River Delta. The texts considered here range from discussions of dolphin physiology, to religious associations with dolphins, to

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industrial-economic explorations, to illustrated children's books, to postage stamps and amusement park exhibits. Such texts are cultural products that—instead of existing in isolation—interact with, influence, and are influenced by places and other texts across time (Lin & Su, 2022; Westphal, 2007).

The geographical context of this paper is the Pearl River Estuary, the body of water at the center of the Pearl River Delta (Greater Bay Area) region. The estuary is bounded by China's Guangdong Province and the two Chinese special administrative regions of Hong Kong and Macao. The Pearl River Delta has become an important site for reconsidering the meaning and nature of islands within the field of island studies (Grydehøj, 2015; Hong, 2017; Lin & Su, 2022, 2024). Su and Grydehøj (2022) show that the area has undergone significant environmental change over the course of millennia, as estuary, islands, mountains, wetlands, and rivers have given way to a more continental landscape, with dry land intercut by rivers, and with human understandings of the landscape and waterscape altering over time. The central estuary has shrunk substantially in size within the past few centuries (Wei & Wu, 2014), due partly to silting and partly to land reclamation (Weng, 2007; H. Xiong et al., 2020). Even in the first half of the 20th Century, much life and work in the region—including in the central city of Guangzhou—took place on the water and with islands (Lin & Su, 2022, 2024). As the Pearl River Delta has become increasingly continentalized, its river and estuary islands have grown in importance in the sociopolitical imagination of the region and its cities (Hong, 2017; P. Su & Grydehøj, 2022).

Islands have not been incidental to the region's historical development. Small island spatiality encouraged the development and consolidation of both colonial island enclaves and continental economic power centers in the Pearl River Delta' political geography (Grydehøj, 2015). The Portuguese colony of Macao was established on islands at the west side of the estuary in the 16th Century, while the British colony of Hong Kong was established on islands at the east side of the estuary in the 19th Century. These colonies only reunified with the Chinese mainland at the end of the 20th Century. Other delta islands were developed into spaces of economic, cultural, and industrial exception (Grydehøj & Su, 2023), such as the utopian colonial island enclave of Shamian (Lin & Su, 2022), the tourism enclave of Qi'ao (Hong, 2020), and the leisure and high-tech island city of Hengqin (C. E. Ong & Liu, 2022; P. Su & Grydehøj, 2024).

Today, the Pearl River Delta is among the world's densest and most populous megacity regions, a crossborder region that serves as an economic driver for China, even as island political geographies have tended to push different sections of the region apart (Scanlon, 2024; P. Su & Grydehøj, 2024). As this paper will show, the Chinese white dolphin has played a role in drawing together the Pearl River Delta's disparate island geographies across political boundaries.

The paper proceeds with an introduction to the Chinese white dolphin. This is followed by a brief overview of human-animal relations research. Next is a roughly chronological exploration of changing ideas concerning dolphins in China, from ancient and imperial China, up through the early years of the People's Republic of China, and into today's context of a unified and coherent Pearl River Delta.

Introduction to Chinese white dolphins

The Chinese white dolphin has a range stretching from the coastal waters of the Western Pacific to the eastern Indian Ocean, encompassing the seas of Southeast Asia. This range includes but spreads beyond the South China Sea crosscultural sphere, an ocean-centered region surrounded by series of island, archipelago, peninsular, and coastal societies (Ou et al., 2024). Populations of the species are fragmented, with significant geographical gaps across their range (M. Liu et al., 2023). Most Chinese white dolphins live in Chinese estuary waters south of the Yangtze River, with the largest population probably being that of the Pearl River Estuary, accounting for 2000-2500 individuals (T. Chen et al., 2010; T. A. Jefferson et al., 2023; Y. Xiao, 2020). The dolphins prefer brackish water, at the interface of the river and the sea (T. A. Jefferson & Smith, 2016).

Despite their name, these dolphins change color over the course of their lives. They are completely black when young, fading to gray with spots or patches as they age. As adults, their backs turn pink while their abdomens turn white. These social animals typically live in small pods of two to six individuals (T. A. Jefferson & Smith, 2016). Chinese white dolphins mainly feed on fish, but their diets vary according to region. They are known to follow fishing boats, catching fish and shrimp that leak through the nets. Reproduction is slow due to long sexual maturity, gestation, and calving interval periods (T. A. Jefferson & Smith, 2016).

Scientists register concern regarding both localized and general declines in Chinese white dolphin populations. Jefferson and Smith (2016) note a variety of major threats ('fishing gear entanglement', 'habitat loss/degradation and disturbance from marine development', 'vessel traffic', 'organochlorine contamination') and minor threats ('direct capture', 'metals and other environmental contaminants'). Other researchers highlight the impacts of explosions related to maritime engineering, which may directly harm dolphins and interfere with echolocation (B. Chen et al., 2009, p. 244), as well as land reclamation and construction, which disrupt habitats (Cai, 2021). Dolphin populations in the Pearl River Estuary are thought to be declining by around 2.5% annually (T. A. Jefferson et al., 2023).

Human-animal relations in the Anthropocene

Islands have become critical symbols in Anthropocene thought (Pugh, 2018). They have come to be viewed as laboratories for engaging with changing planetary conditions: "It is the affordances and sensitivities of island life in particular which reposition islands [...], not merely in modernist

ways—needing to be protected and saved—but as spaces" for developing new understandings of humans' relations in the world (Chandler & Pugh, 2021, p. 213).

Human-animal relations have existed for as long as humans have existed, but these have shifted with Modernity and the Anthropocene (Manning & Serpell, 2002). With the development of new technologies and new modes of urbanization, people are perceiving and interacting with animals in new ways (Shingne & Reese, 2022). Some interactions place species at risk or otherwise profoundly alter animal lifeways (Galka, 2022; Hayward, 2021). Human-animal relations can become challenging, emotionally charged, and complex in terms of agency (Candea, 2010; Krieg, 2024). A 'decolonizing' approach to animal geographies requires consideration of their colonial and cultural processes (Hovorka, 2017). Indeed, human-animal relations are always political, and politics are always interspecies (Lloro-Bidart, 2017; Youatt, 2014).

Relations between humans and marine mammals have been a prominent field of study. For instance, McNiven (2010) has explored kinship relations between human hunters and dugong prey around the Torres Strait Islands, while LeMoine et al. (2023) examine archaeological evidence of Paleo-Inuit Dorset hunter-prey relations in what is today's Canadian and Greenlandic Arctic. Dolphins alone have inspired considerable research, for these are animals that have been given exceptional social and symbolic roles in diverse cultural-geographical contexts (e.g., Arregui, 2020; Besio et al., 2008; Taimoor & Leghari, 2013).

The present paper is an exploratory attempt to understand what humans and dolphins mean to one another in the Pearl River Delta. As such, it does not seek to interpret interactions between humans and dolphins in this geographical space through the lens of existing human-animal relations theory. It instead takes a human-animal relations approach to lay the groundwork for future research that takes localized understandings and experiences seriously. Notions concerning Chinese white dolphins in the Pearl River Delta have undoubtedly been influenced by wider national and international thinking about dolphins. Nevertheless, this thinking has always been adapted to the Pearl River Delta's specific local context of estuary, islands, mountains, wetlands, rivers, and cities.

Because the present paper is an exploratory literature review, it is incapable of providing data from direct observation of human-dolphin interactions. However, in the cases of historical conditions, textual sources are often all that are available to us. Comparison of textual treatments of dolphins in China and the Pearl River Delta across time can provide unique insight into transforming human-animal relations.

Human-dolphin relations in China

Ancient and imperial human-dolphin relations

Archaeological studies of Late Neolithic (ca. 2200–1500 BCE) middens in today's Hong Kong have revealed dolphin teeth and bones (Cheung et al., 2024; Shang & Wu, 1997, p. 28). Hunting and opportunistic consumption of cetaceans was common in many parts of the ancient world (e.g., Lõugas & Bērziņš, 2023; Mannino et al., 2015). As Charpentier et al. (2022, p. 2) note though, "whales can be quite invisible in the archaeological record," with their large size necessitating their being "processed on the shore [...], their skeleton then broken down and dispersed by the action of the waves, leaving few or no archaeological traces." The ancient consumption of cetaceans in a range of island and coastal societies is not in doubt, but it is often impossible to distinguish active hunting cultures from exploitation of beached animals in the archaeological record (Bernal-Casasola, 2018).

Although there is a relative lack of pre-20th Century writings involving dolphins from the Pearl River Delta, there is considerable evidence of human-cetacean relations from elsewhere in the South China Sea crosscultural sphere. For example, whale worship practices were prominent in parts of Vietnam (Lantz, 2009), and regular dolphin and dugong hunting continued in parts of Malaysia until the 1980s (Jaaman et al., 2008).

In traditional Chinese culture, dolphins were associated with pigs. The Chinese word for 'dolphin' is *haitun* 海豚 (*sea pig*, *sea piglet*). This association is also present in English, with the term 'porpoise' (derived from French) having its roots in the Latin *porcus* + *piscis* (*pig fish*). This notion is often emphasized in imperial Chinese descriptions of dolphins (not merely Chinese white dolphins). The late-16th Century *Compendium of Materia Medica*本草纲目explains:

> Dolphins are born in the sea and appear when there is wind and waves. They are shaped like pigs, with noses on their heads. They make sounds and spray water upward, with hundreds in a flock. Baby dolphins follow their mothers in groups in the same way as carp. If a man takes a young dolphin and ties it up in the water, its mother will come to retrieve it (Li, 2013, p. 1627).

Similarly, Zhao Zhiqian's (qtd. in Zou, 2003, p. 78) 19th-Century *Pictures of Strange Fish* 异鱼图 depicts dolphins in a pig-like manner: "The locals call it a sea pig, with a fish body and a pig head. Even the small ones weigh hundreds of kilograms, and their meat is inedible. They use it for lamp oil, which keeps flies away."

The above quote from *Compendium of Materia Medica* links dolphins with wind and waves. Along the same lines, a proverb states that, "starting from the fifth day of the tenth lunar month, sea pigs will dance in the ocean"

(D. Wen, 2012, p. 264). The Ming dynasty *Poem of Wind and Waves* 风涛歌 says that "When the sea pigs are in turmoil, the wind will be uncontrollable" (Qi Jiguang, qtd. in J. Qu, 1999, p. 239).

Heavy winds can prove fatal to sailors, but in the Pearl River Delta's Lingnan culture, large fish (dolphins were traditionally regarded as fish) were connected with disasters more generally. For instance, in *New Sayings of Guangdong*广东新语, published in 1700, it is recorded:

> *Jiyu*暨鱼, the largest of which is more than two *zhang* [an ancient Chinese measurement, around 3.3 meters] in length, has a sharp ridge on its back. From time to time, they come to Nanhai Temple and then retreat. It is said that they are paying tribute to the South Sea God. They may come several times a year, or once every few decades. If they come frequently, it is a sign that there will be an epidemic. [...] There are two kinds, black and white. Their appearance is often followed by the wind, so they are also called 'wind fish'. 'Ji' means ominous. As the saying goes: 'the ominous fish, in black and white, appear many times without being asked' (D. Qu, 1985, p. 550).

These negative connotations around the Pearl River Delta differ from elsewhere in the region. The dolphin is revered as the 'Mazu fish' in Fujian and Taiwan, which are the historical centers of worship of the goddess Mazu. Although Mazu is known to cure illnesses, the goddess is most famous for rescuing fishers and other sailors who encounter maritime disasters, particularly storms (Grydehøj, 2024). It has previously been theorized that dolphins were associated with Mazu in Fujian and Taiwan because they appeared in coastal waters during the spring, at the key time for Mazu worship, so they too seemed to be worshipping the goddess (Ru & Zhuang, 2001, p. 136). It has also been said that dolphins protect people from shark attacks, similar to Mazu. Fishers in these areas traditionally avoided harming dolphins and have sometimes collected dolphin bones and placed them inside temples for worship (Z. Huang & Liu, 2000, p. 198). It is also reported though that Chinese white dolphins were eaten during Mazu celebrations in Fujian (Porter & Lai, 2017). The Chinese White Dolphin Conservation Promotion Day (begun in 2018) was set for the 23rd day of the third lunar month, coinciding with Mazu's birthday (Zhuhai Municipal Government, 2018).

In North China, local chronicles historically recorded the appearance of dolphins. An account from Shandong states:

> They are referred to as big fish 大鱼together with whales. They are depicted as pig shaped. When waves ebb, they are found dead on the seashore. The local people hold their mouths open with wood poles and go inside to take their meat and oil.

> Their meat is inedible, while their oil can be used to light lamps (Wendeng County Annals, qtd. in S. Wang, 2006, pp. 273–275).

The Qing dynasty *Pictures of Sea Animals海错图*, an encyclopedia on marine animals compiled in the 17th and 18th Centuries, describes dolphins similarly:

> If it is said to be a pig, why does its body resemble that of a fish? I asked the fisherman, and he said, 'It is indeed shaped like a fish, not a pig.' Many people do not know about it because it is not sold in the market. It is regarded as unlucky to catch one in a net. Its meat tastes bad, but when boiled down, it produces oil for lighting [...] There are two pieces of fat in the abdomen, which look like pig fat. Its liver, intestines, heart, lungs, waist, and stomach are all like that of a pig, which can be eaten, and its belly is particularly delicious. But the liver tastes bad, like sawdust. [...] The dolphin likes wind, and it keeps its head upright in the water, bows to the wind, then dives, flowing up and down with the waves. When fishermen happen upon them, they know a strong wind is coming, so they quickly withdraw their boats and gather up their nets to avoid it. Although it is said that lazy women transformed into dolphins, this is just a joke (Nie, 2021, pp. 159–160).

Already these early sources show the beginnings of anthropomorphism, with dolphins being attributed special relationships with deities and potentially a link with certain kinds of humans (lazy women). This tendency would increase in strength in the late 20th Century, though not before a marked shift toward viewing dolphins as natural resources.

Dolphins as natural resources

In ancient, imperial, and republican China, extant texts concerning dolphins largely come from elite sources, such as bureaucrats and literati. We have only indirect access to popular ideas concerning dolphins among those people who regularly interacted with these animals. This changed with the establishment of the People's Republic of China in 1949, as records began to be kept for practical purposes related to government administration, and as a new state philosophy guided inquiry into the lives of ordinary working people.

In writings published in the 1950s, a time of continuing poverty within China, dolphins are noted for their practical functions, as a natural resource providing food, medicine, and oil. In 1952, a reporter, discussing Hailing Island in Guangdong, writes: "There is a big fish, which local people call a sea pig. It looks like a pig, except the tail is a fish tail. I have seen more than

once that sea pigs are killed for sale. The fish stomach, intestines, and blood sell very quickly" (Bai, 1985, p. 144). Six years later, in a volume on *The Integrated Use of Dolphins 海豚的综合利用*, another author writes:

> There is a growing demand for edible oil, industrial oil, and meat with the development of people's living standards. Because production cannot meet demands, it is necessary to find new sources of oil and meat. Dolphins' fatty tissue is a good source of oil, with a yield rate of 75%. 200 kg of dolphin can produce 35 kg of oil and 88.2 kg of meat. Oil content in liver is not very high, vitamin unit content is high; viscus can be used as feedstock or fertilizer, bone can be made into bone powder or gel, blood into blood powder (Hou, 1958, pp. 7–18).

This book contains a detailed description of the tools and steps for manually butchering dolphins and methods of utilizing dolphin oil, meat, and fins.

In the 1960s, research by the Guangdong Metallurgical Research Institute concludes that the province's coastal areas are rich in dolphin oil. Because the meat is pungent, it is either inedible or of low economic value, but if sufficient labor and equipment is deployed in their hunting, dolphins could prove valuable as a source of flotation reagents (Jian, 1981, p. 112). A 1976 book on marine production includes a section on processing and using dolphins: For instance, meat, fins, and liver can be eaten; oil can be used for soap and to lubricate leather; skin can be made into leather; bones can be ground into fertilizer; and teeth can be used in arts and crafts (Fujian Provincial Aquatic Products Supply and Marketing Company & Processing Department of Xiamen Aquatic Products College, 1976, pp. 180–186). Another book on medicines derived from marine animals indicates that river dolphins can provide cures for disease (Logistics Department of Health Department of Chinese Navy & Shanghai Institute of Pharmaceutical Industry, 1977, p. 151).

Chinese writings on industrial uses for dolphins persisted into the 20th Century. A 1998 book on marine medicines states that "Dolphin can be hunted year-round. Its meat can be eaten, while its oil and meat can also be used to make drugs [...] Liver oil made from dolphins contains Vitamin A," and dolphin oil is indicated as an effective drug for inhibiting sarcoma and liver cancer (J. Zhang, 1998, p. 51). Others argue that "Sea mammals, including dolphins, provide very good raw materials for oil refinery because their subcutaneous fat contains very high oil-fat content" (Z. Huang, 1996, p. 44), and dolphin skin is a valuable source of leather (Q. Luo & Jiang, 1991, p. 32; X. Zhang, 2005, p. 66). Furthermore:

> Young dolphins have fresh and delicious meat, second only to pufferfish, non-poisonous, therefore of high economic value. Meat and fat could be used as medicine. If one takes 250 kg of

> cooked dolphin meat, it helps treat deadly malaria. Its fat could be applied to the skin to cure swelling, scrabs, and hemorrhoids (Xu & Xu, 2001, p. 135).

Nevertheless, with the passage of time, Chinese writers increasingly prioritize species conservation. For instance, one 2002 book notes that even though dolphin "meat and fat are rich in nourishment," because the dolphins are intelligent and energetic, they should be protected rather than hunted or killed (F. Xiong & Cun, 2002, p. 707).

Dolphins as friends to humans

In contrast to the technical and utilitarian approaches to dolphins as natural resources discussed above, the 1970s and 1980s saw dolphins emerge as a favored topic in Chinese children's illustrated books and popular science literature.

A common theme in these books is the anthropocentric notion that dolphins could assist people in underwater endeavors. For instance, a 1983 book suggests that "With populations decreasing, there are increasing calls for greater protection, and large-scale hunting and killing provides no economic value," so it would be better to train dolphins to help humans (e.g., communicating with rescue divers, locating fish, transporting goods and equipment, carrying equipment to measure water temperature and salinity) (K. Wu & Yu, 1983, p. 120).

Chinese writings of this kind often mix popular science understandings with romantic notions. Dolphins are said to be the most intelligent creatures in the sea, with an exceptionally high brain-to-body weight ratio (H. Luo, 1982, p. 123; Shen, 1981, p. 113). Dolphins can be trained to be actors, postal workers, or bomb removers (J. Huang, 1982, p. 128; S. Xiao, 1999, p. 162). Dolphins communicate with one another in their own languages and can learn to pronounce a few simple words in the same way as humans (C. Wang, 1984, p. 109). The soundwaves dolphins produce can be used to activate the brain cells of children suffering from cerebral palsy (T. Ye, 2002, p. 200). Dolphins are not only skilled at swimming and echolocation but are friendly to humans and rescue people who find themselves in difficulty at sea (H. Luo, 1982, pp. 122–127; Shen, 1981, p. 78). Dolphins are mild, sensitive, playful, curious, and sociable (Zhou & Liu, 1986, p. 2). If one dolphin falls ill, other dolphins will care for it, raising it above water so it can breathe (Yan, 2013, p. 77). The dolphin is a beneficent genius of the sea that saves people and animals. One author says, "Whenever I see dolphins on the TV or in photos, I am impressed by their beautiful shapes, graceful nature, and gymnast-like jumps. Their eyes are always smiling. I have never seen such innocent smiles in any other animal, including humans" (T. Ye, 2002, p. 200). Dolphins smile at people, greet people, and play with ships and children in shallow water. If a dolphin is caught by humans, it will respond obediently and not seek to defend itself (J. Huang, 1982, p. 129). Dolphins are the epitome of grace and beauty (Ru & Zhuang, 2001, p. 136).

Figure 1. *The Smart Dolphin* (C. Liu, 1980) (left) and *Weiwei and the Dolphin* (P. Wang, 1982).

These perceived traits made dolphins perfect heroes for children's stories and illustrated books. The illustrated book *Dolphin A'hui* 海豚阿回 (Dan, 1981) tells the story of a dolphin that has been trained to help research submarines carry out rescue missions. The dolphin is described as clever, kind, obedient, and communicative. With a strong sense of collectivism, the dolphin is a good friend to the people, representing the ideal citizen. The picture books *The Smart Dolphin* 聪明的海豚 (C. Liu, 1980) and *Weiwei and the Dolphin* 维维和海豚 (P. Wang, 1982) likewise portray dolphins as good helpers and friends to people because they are smart and cooperative (see Figure 1).

The 1982 Chinese children's film *My Friend the Dolphin* 我的朋友小海豚 portrays a mutually beneficial relationship between a dolphin and human protagonist. In the story, a young man rescues a baby dolphin whose mother died while giving birth in the South China Sea. The man, who works aboard a research vessel, trains the dolphin so it can assist with undersea research activities. Later, the dolphin departs with a pod of wild dolphins. One day, the man is caught by a giant octopus and whistles for help. Recognizing the whistle, the dolphin comes to his friend's rescue, and the pair is reunited (X. Liu, 1999, pp. 210–220).

It is unclear to what extent such stories were inspired by foreign media. There is a long history of (disputed) reports of dolphins rescuing humans (H. Huang, 2011). The rapid growth in anthropocentric but heartwarming tales of human-dolphin interaction just at the time that China was opening up to the world in the early 1980s suggests that new ideas about dolphins were being imported from the West, challenging traditional Chinese perceptions. However, such stories need not have been imported from distant continents, given that legends of dolphins and whales who save sailors are prominent in certain Vietnamese (Lantz, 2009) and Fujianese (Ru & Zhuang, 2001) traditions. Causality cannot be determined on the basis of the existing textual evidence.

Dolphins as symbols of national progress

Dolphins would quickly come to hold a different kind of symbolic significance in the Pearl River Delta, a geographical space with complex territorialities and difficult histories. The 1990s was a period of regional transition, as the British colony of Hong Kong and the Portuguese colony of Macao prepared to become special administrative regions of China. This occurred for Hong Kong in 1997 and for Macao in 1999. However, closer links were being built between the colonies and Guangdong Province already from the start of the Reform and Opening Up period in 1979, with the establishment of Shenzhen and Zhuhai as cities focused on crossborder trade and exchange and with Guangzhou's growth as an industrial powerhouse.

As noted above, the special political histories of Hong Kong and Macao were inseparable from their island geographies. The Chinese white dolphin—as a charismatic species that has its core habitat in the body of water that connects Hong Kong, Macao, and Guangdong—was well placed to symbolically connect the region's islands. Specifically, the dolphin came to symbolize familial bonds between these three jurisdictions. The dolphin was selected as the official mascot for Hong Kong's reunification with China (see Figure 2). In the words of the mascot's designer:

> The Chinese white dolphin is special. It lives in the water area near Hong Kong in the Pearl River Estuary. It has a sense of family. If its mother or son is missing, the dolphin will get it back. Every year, dolphins travel back to the Pearl River Estuary to give birth. Dolphins cherish the idea of family. That is why the Reunification Committee decided to use it as the mascot. [...] The committee requires the design to be joyous, lively, and at the same time be solemn (Han, 2003, p. 23).

This idea is echoed by others, who connect dolphins' perceived love for family with political connections between Hong Kong and the Chinese mainland:

> The dolphin mothers swim along the river and bear children on the Pearl River. After that, the mother swims back to the sea together with its baby. They do so year after year. They are so closely connected with Hong Kong. [...] When its baby is trapped by fishermen, the mother follows the boat closely, calling for her baby. It is just like how the motherland is defending Hong Kong, in the hope that it will return as soon as possible (S. Huang, 2006, p. 294).

In 1999, Hong Kong Post issued a set of four Chinese white dolphin stamps (Hong Kong Special Administrative Region Government, 1999). In 2017, Macao Post likewise issued a set of Chinese white dolphin stamps.

Figure 2. The Chinese white dolphin as a mascot for Hong Kong's reunification with China. (Han, 2003, pp. 21, 23).

Prominent Chinese white dolphin statues have been constructed in Hong Kong's Ma On Shan Park (1998) and Tuen Mun Golden Coast's Dolphin Square (2005).

Conservation

As Chinese white dolphins rose to symbolic prominence in the Pearl River Delta alongside a wider affection for the animals in China, greater attention was paid to threats to their survival. In the 1990s, public concern arose concerning reported decreases in the region's dolphin population in the context of the Pearl River Delta's rapid development. Dolphins were regularly killed in fishing nets in the 1980s and 1990s (R. Wu, 2003, p. 268), and substantial media coverage focused on dolphin deaths occasioned by marine infrastructure development and crossborder transport. For example, dolphins were killed and injured in a construction-related explosion on Sanzhao Island in Zhuhai in 1993; during the construction of Hong Kong International Airport on the island of Chek Lap Kok in 1993-1995; and by hydrofoils passing Guishan Island on their way between Hong Kong and Macao (Zeng, 2000). The land reclamation that occurred during the airport construction was particularly sensitive, located in the crucial dolphin habitat of northern Lantau Island (H. Su, 2017).

In 1991, the Chinese white dolphin was included in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). A year later, it was listed as a National Key Protected Wildlife (Level I). Guangdong Province's Oceans and Fisheries Administration responded in 1995 by establishing dolphin monitoring points and investigating dolphin populations (Zeng, 2000, p. 81). Over the following

years, marine parks and reserves were designated in the Pearl River Estuary, some with emphasis on dolphin conservation, including six nature reserves administered by Chinese mainland authorities. In October 1999, the Guangdong Pearl River Estuary Chinese White Dolphin Nature Reserve was established, and in June 2003, it was promoted to a national-level nature reserve, covering 460 km^2. The nature reserve's management base is on Qi'ao Island, itself an island that is influential in the region's territorialization (Hong, 2020).

The conservation attention granted to the Chinese white dolphin must be understood with reference to the failure to save the *baiji* 白鱀豚 (a freshwater dolphin) and *baixun* 白鲟 (Chinese paddlefish), two Yangtze River megafauna species that went extinct in the 1990s-early 2000s, primarily due to fishing and habitat fragmentation (Turvey et al., 2007; H. Zhang et al., 2020). These past failures made preservation of the Pearl River Delta's Chinese white dolphin a priority for state and society.

In 2018, Daphne Wong directed the award-winning documentary *Breathing Room* *白海豚失樂園* on efforts to save Hong Kong's Chinese white dolphins. Wong (2019) says she was inspired by a heartbreaking 2015 news report concerning a dolphin mother that for a full week carried its dead baby on her back, trying to get it to breathe. In the realm of fiction filmmaking, the blockbuster *The Mermaid* *美人鱼* (2016), directed by and starring Hong Kong comedian Stephen Chow Sing Chi 周星驰, takes as its theme the relationship between humans and endangered marine mammals in Hong Kong. It tells the story of a business tycoon who falls in love with a mermaid and subsequently fights against land reclamation to save the whole mermaid community. As Chu (2021, pp. 183, 189) notes, "The film makes implicit metaphoric reference to traditional folklores and the endangerment of pink dolphins in Hong Kong since the early 2000s, to appeal to the culturally specific Hong Kong and Chinese-speaking viewers" and "can simultaneously be seen as an ecological metaphor against Hong Kong's reclamation works and for the protection of Chinese white dolphins and other marine lives." This is part of a wider Chinese popular culture adaptation of the Western mermaid figure (Hayward & Wang, 2018).

In 2021, China Post produced its own Chinese white dolphin stamps, both as part of its National Key Protected Wildlife (Level I) stamp series and in a stamp depicting sustainable transport development. The latter stamp is interesting for tying the Pearl River Delta's infrastructure development—often condemned for causing environmental devastation (Hayward, 2016)—to nature preservation, with the slogan "The Hong Kong-Zhuhai-Macao Bridge, Chinese white dolphin, and other elements embody the concepts of resource-intensive utilization, green development, and green transport" (Zhu & Di, 2021) (see Figure 3).

Dolphin protection has been closely associated with the Hong Kong-Zhuhai-Macao Bridge (constructed 2009-2018) and become part of the ecological and political discourse surrounding the government's efforts to

Figure 3. Stamp depicting sustainable transport development, showing the Hong Kong-Zhuhai-Macao Bridge, an electric bus, bicycles, and a pair of dolphins in the upper right corner (China Post Group Corporation Limited, 2021).

balance environmental and economic priorities in the Pearl River Delta (H. Wen et al., 2016, p. 73). The 55 km bridge system connects the Chinese mainland and the two special administrative regions. The bridge's design, construction, and engineering management aimed for 'zero pollution' and 'zero casualties' of Chinese white dolphins, with the slogan "while the bridge is open to traffic, the white dolphins do not move" (Y. Xiao, 2020). Three towers on the bridge have been given an abstract dolphin form: "Combined with the marine culture of the region's Chinese white dolphin habitat, [the towers] symbolize the harmonious coexistence between humans and the ocean, and are one of the important iconic constructions of the Hong Kong-Zhuhai-Macao Bridge" (Zhong, 2018). Through the bridge, the dolphins become a tool to symbolically reunify Hong Kong, Macao, and the Chinese mainland.

The dolphin conservation aspect of the Hong Kong-Zhuhai-Macao Bridge is controversial, given that both the bridge's construction and the cross-estuary ferry transport that the bridge has significantly replaced have been assessed as endangering dolphin populations. At a political level, the bridge can be seen as part of a learning process related to the failures of other major infrastructure projects in the Pearl River Delta. For instance, in 2006, China Light and Power announced plans to build a Liquefied Natural Gas receiving terminal on Tai A Chau in Hong Kong's Soko Islands, an important Chinese white dolphin habitat. The World Wildlife Fund engaged in extensive dialogue with the Hong Kong government and launched a public awareness campaign, which ultimately contributed to China Light and Power announcing in 2008 its decision to halt the terminal plans (World Wildlife Fund, n.d.).

Tourism

In the Chinese mainland, the primary means of observing Chinese white dolphins is to visit Chimelong Ocean Kingdom on Hengqin Island in Zhuhai. In 2017, the amusement park opened its Chinese White Dolphin Museum, in coordination with the opening of the Pearl River Estuary Chinese White Dolphin National Nature Reserve. Tellingly, Chimelong Ocean Kingdom markets the Chinese white dolphin as "the giant panda of the sea," a loveable symbol of Chinese culture. The amusement park's Chinese White Dolphin Exhibition Area presents its animals as a loving 'family', with an elderly and elegant mother with pink skin; an intelligent and studious brother; a bold younger brother full of curiosity about the world; and a lively, beautiful, and generous 'girl' (Tang, 2019). This anthropomorphism follows the family values theme of previous decades' approaches to the dolphins, drawing upon Chinese cultural emphasis on family bonds. As Ong (2017) argues, Chimelong Ocean Kingdom's broader edutainment efforts simultaneously buttress and receive ideological support from nationally promoted notions of 'harmonious' human-nature relations while advancing a distinctive kind of middle-class consumerism. The Chinese white dolphins displayed at Chimelong Ocean Kingdom were not, however, born in China; they were imported from a Singapore aquarium that was closing amidst a flurry of development projects on Sentosa Island (H. Chen, 2022, p. 11).

Dolphin-watching boat trips became a popular tourism activity in Hong Kong beginning in the mid-1990s and accelerating with the selection of the Chinese white dolphin as the official mascot of the 1997 reunification. This has led to "irresponsible dolphin-watch practices" (Hong Kong Dolphin Conservation Society, n.d.). The demand for seeing dolphins in the wild is such that tour operators have placed dolphins at risk with their activities, and tourism boats may affect dolphin behavior (Piwetz et al., 2012). The village of Tai O on Lantau Island developed a particularly strong reputation for dolphin-watching tours (Hayward, 2016), but tour operators—eager to please tourists and ensure dolphin encounters—have been known to harass, speed toward, and surround groups of dolphins, causing the animals mental distress and, in some cases, injury and even death due to collision with boat propellers (T. Jefferson, 2018, p. 723; Wong, 2019). Falling tourist numbers and declining local dolphin populations over the past two decades has, however, slowed Tai O's dolphin-watching boat tour business and promoted a maturation of its dolphin-themed tourism offerings (Jiang et al., 2023).

Although dolphin-watching boat tours could be viewed as existing in straightforward opposition to the interests of dolphins, the reality is complex. The Tai O boat tours developed as alternative livelihoods to fishing. Local fishers in the Pearl River Delta have long had a complex relationship with the dolphins. As filmmaker Daphne Wong (2019) notes of her interviews with Hong Kong fishers, "Usually, where there are many dolphins, there will be many fish, so fishing boats will follow the white dolphins to catch fish," yet

because the dolphins "compete for the best and freshest fish from their fishing nets," the fishers "both love and hate" the animals. Other fishers from Tai O express a dislike for dolphins (J. Ye, 2020). Both human fishers and the dolphins have occasion to regard one another as helpful for catching fish, but neither is particular invested in the other's success.

Discussion and conclusion

This paper has been an exploratory literature review of historical and more recent writings concerning dolphins in China and more specifically Chinese white dolphins in the Pearl River Delta. By considering the history of human-dolphin relations in China, it is possible to gain an understanding of how the Chinese white dolphin has become a symbol for the Pearl River Delta.

The Pearl River Delta is an environment undergoing rapid changes, having over the past four decades transformed into one of the world's largest megacity regions. However, the Pearl River Delta has been undergoing rapid change for millennia. Its transition from a waterscape of islands, mountains, wetlands, rivers, and estuary to a continental landscape intercut by rivers with a central bay (P. Su & Grydehøj, 2022) has produced major changes for both human and dolphin lifeways. There is archaeological evidence for human consumption of dolphins in the prehistoric Pearl River Delta. In imperial China, dolphins seem rarely to have been a favored catch, but they were familiar to fishers and acquired associations with both good luck and bad luck. In the early decades of the People's Republic of China, characterized by widespread poverty and breakneck industrialization, some people came to see dolphins as a natural resource suitable for large-scale exploitation. The subsequent Reform and Opening Up period that began in 1979, however, saw the emergence of new romantic and anthropomorphized ideas about dolphins as friends to humans. Dolphins came to be depicted as perfect Chinese citizens: loving, loyal, and devoted to family.

This idealized understanding contributed to the Chinese white dolphin becoming the symbol of the reunification of the island territories of Hong Kong and Macao with China and ultimately for the cohesiveness of the Pearl River Delta crossborder region as a whole. Yet the same economic and political processes that were bringing the Pearl River Delta's islands and mainlands together were also threatening the dolphins. This has turned the species into a symbol for a China at risk—a giant panda of the sea—that requires staunch state, social, and commercial interventions. Conservation of the Chinese white dolphin has become a project of national symbolic significance.

These processes cannot be separated from the Pearl River Delta's complex estuary and island geography. This geography created limitations on and opportunities for economic activities and lifeways in the region. It also encouraged the formation of colonial island enclaves and island power centers out of which the Pearl River Delta's cities would one day grow. With the

era of decolonization, it is the waters of the estuary and the dolphins that live within them that have provided means of creating a coherent-yet-diverse region of China.

Island studies literature has frequently used islands to disrupt or complicate perceived human-nature and human-animal divides, often with sensitivity to colonial relations (e.g., Borgnino & Giordana, 2023; Burgos Martinez, 2024; DeLoughrey, 2019; Galka, 2022; Hayward, 2021; Pugh & Chandler, 2021). Such research, usually arising out of 'the West', has illustrated the complexity of human-nature entanglements in the Anthropocene, sometimes by reflecting upon Indigenous and 'non-Western' ways of knowing the world. The present paper's Chinese perspective offers further nuance: Although Chinese people have long engaged closely with dolphins, these engagements have tended to be highly anthropocentric, even in pre-modern times. Dolphins have been seen through the lens of human needs, fears, and desires, even in their symbolic roles as omens of disaster, companions of the goddess, friends to children, icons of national unification, and symbols of ordinary people struggling through times of breakneck change.

Operating alongside all this has possibly been an underdocumented history of Chinese white dolphins and fishers working together or in tension to catch fish. Nevertheless, anthropocentric relations with Chinese white dolphins clearly predate capitalist Modernity. There is no golden age of Pearl River Delta human-dolphin relations to which to return or from which to gain inspiration. Furthermore, the Pearl River Delta's transition from an island geography to a continental geography has not produced obvious changes in how dolphins have been perceived, except that some of their former symbolic roles (related to now-diminished fishing and seafaring cultures of the region) have declined to insignificance. In the wider field of island studies of human-animal and human-nature relations, it will be important to carefully consider the causalities and temporalities of anthropocentrism.

Directions for future research

No previous paper has explored the development of human-Chinese white dolphin relations in the Pearl River Delta over time. The present paper can serve as a platform from which further research can take inspiration. For example, the present paper's literature review failed to find evidence of regular dolphin hunting or dolphin consumption in the Pearl River Delta at any point in history, but this failure does not mean such activities did not occur. More focused research could determine whether this was ever the case in the past. Similarly, on the basis of the texts considered here, there would seem to be good grounds for analyzing media and state narratives of Chinese white dolphins in light of international research into human-dolphin relations.

Acknowledgements

I thank Adam Grydehøj for his assistance with language editing.

Funding

This work was supported by New Liberal Arts Research and Reform Project of the Ministry of Education of China [2021110070], the Philosophy and Social Science Fund of the 14th Five-year Plan of Guangzhou City [2023GZGJ229], the Fundamental Research Funds for the Central Universities [QNMS202326], China Scholarship Council [202306150020] and the Double First-Class Construction Project of South China University of Technology [K5200690].

Submitted: April 18, 2024 CST. Accepted: July 25, 2024 CST. Published: August 13, 2024 CST.

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