



Current Issues of Taiwan's Marine Protected Areas Legal Regime

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ABSTRACT

As an 'Ocean Nation,' it is essential for Taiwan to make efforts to conserve its aquatic zones through marine protected areas (MPAs). Marine protected areas have considered one of the most precise methods of maintaining sustainable ecosystems and restoring fish stocks. This article discusses the legal regime for marine protected areas currently applied and its institutional arrangements in Taiwan. This study emphasizes legal issues in Taiwan's marine conservation efforts. This paper analyzes eight primary legislation relating to marine protected areas in Taiwan. Furthermore, to acquire actual field data, this study conducted interviews with a semi-structured questionnaire in three prominent Taiwan institutions related to their marine conservation task. All data obtained were analyzed and presented qualitatively. The issues of Taiwan's marine protected area legal regime have been identified. First, the main issue in Taiwan is that the legal basis for marine conservation is the legislation applied to land. Second, the existing maritime law regime in Taiwan does not emphasize marine conservation efforts. Subsequently, this article also discusses institutional arrangements related to Taiwan's marine protected areas. This paper also offers possible solutions. Enforcing five key Acts related to marine conservation, particularly the 2015 Act of Coastal Zone Management and strengthening institutional Taiwan's Ocean Affairs Council, are the solutions offered in this study.

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1. Introduction

Marine protected areas (MPAs) have benefits as tools to increase species and improve biodiversity.¹ On a large scale, the establishment of MPAs was performed worldwide,

¹ Camille Mellin *et al.* (2015). "Marine Protected Areas Increase Resilience Among Coral Reef Communities". *Ecology Letters*, 19(6): 629-637. See also T. E. Davies *et al.* (2017). "Large Marine Protected Areas Represent Biodiversity Now and Under Climate Change". *Scientific Reports*, 7(9569): 1-7; and Jorge

including the Asia-Pacific region after adopting the Aichi Biodiversity Targets in 2010.² Nevertheless, in several countries in Asia, the concept of marine conservation is still relatively new.³ It is arduous to stipulate specific legislation on marine conservation and create new marine control institutions in some countries. This paper discusses developments and legal issues related to marine resource management in Taiwan.

Taiwan defines a marine protected area as an area stretching seaward from the tide line to a specific range that serves to provide sufficient protection for the sustainable use of ecological resources, significant cultural heritage, and unique natural features.⁴ Currently, Taiwan has 29 marine protected area networks with a total area of more than 30,000 square kilometers covering 46 percent of Taiwan's territorial sea area of approximately 65,100 square kilometers.⁵ Taiwan classifies the protection of marine areas into three levels.⁶ The first is "No entry or impact," a marine protected area that can only be used for surveys, scientific research, restocking, and prohibited from doing anything that can affect or damage the ecosystem, cultural heritage, or natural features of the area. The second is "No take Areas," namely prohibited areas for exploiting natural or cultural resources. The third is "Multifunction," namely marine protected areas for sustainable use such as fishing and diving; however, these activities are strictly regulated.

The perspective of land management heavily influences the legal regime of the marine area in Taiwan.⁷ Taiwan's aspiration to achieve marine-based development and the significance of marine conservation was realized after the issuance of the policies of the 2001 Ocean White Paper and 2004 National Oceans Policy Guidelines.⁸ The issuance of these policies has helped the Taiwanese Government to strengthen marine conservation efforts by establishing various advanced policies in the marine sector. These progressive policies include the Action Plan of Biodiversity in 2001 and the Policy Guidance of Sustainable Development in 2009.⁹ These policies support the significance of area-based management by establishing a network of marine protected areas.

Nevertheless, these policy papers are not legally binding. These policies do not have the substantive coercive power of a comprehensive maritime law regime. Recently, the implementation of environmental and marine resource management in Taiwan still refers to the legislation related to the management of natural resources on the land. The competence of institutions that focus on land management is extended to maritime

A. Angulo-Valdés and Bruce G. Hatcher. (2010). "A New Typology of Benefits Derived from Marine Protected Areas". *Ecology Letters*, 19(6): 629-637.

² Stephen Woodley *et al.* (2012). "Meeting Aichi Target 11: What Does Success Look Like for Protected Area systems?". *Parks*, 18(1): 23-36.

³ Joshua E. Cinner and Shankar Aswani. (2007). "Integrating Customary Management into Marine Conservation". *Biological Conservation*, 140(3-4): 201-216. See also P. Keith Probert. (2017). *Marine Conservation*. Cambridge: Cambridge University Press, p. 206.

⁴ Taiwan's Fisheries Agency. (2020). *Taiwan's Marine Protected Areas*. Available online from: <https://www.fda.gov.tw/en/WorldOceansDay/content.aspx?id=4&chk=a2fed357-be6d-40e4-a3e5-b41349f9979b¶m=pn%3D1>. [Accessed August 06, 2020].

⁵ *Ibid.*

⁶ *Ibid.*

⁷ Wen-chen Shih. (2012). "A Comparative Study on Marine Protected Area Legislation in Taiwan and China". *Vermont Journal of Environmental Law*, 14(2): 232-273.

⁸ Yi-Che Shih. (2017). "Coastal Management and Implementation in Taiwan". *Journal of Coastal Zone Management*, 19(4): 1-7.

⁹ Meng-Tsung Lee *et al.* (2014). "Towards Marine Spatial Planning in Southern Taiwan". *Sustainability*, 6(1): 8466-8484.

affairs due to this approach. This method raises problems for the effective management of marine resource conservation in Taiwan.

Several studies related to the establishment of marine protected areas in Taiwan have performed. Shiau-Yun Lu, Cheng-Han Shen, and Wen-Yan Chiau have reviewed and provided recommendations on the principles of MPAs protection and Zoning strategies for establishing MPAs in Gueishan Island, Yilan County.¹⁰ Subsequently, Jyun-Long Chen *et al.*¹¹ has provided directions on financing mechanisms for the sustainability of MPAs in Taiwan. However, no study explicitly addresses the legal regime's issues for marine protected areas in Taiwan.

This paper discusses the current legal regime for marine protected areas in Taiwan, including institutional governances related to marine conservation. This paper will also reveal issues in the legal regime related to marine protected areas in Taiwan and then provide solutions for improvement.

2. Method

This article discusses eight legislations pertinent to current issues of Taiwan's marine protected areas legal regime. These eight Taiwan's legislations include the 2010 Law of National Park, the 2013 Act of Wildlife Conservation, the 2011 Cultural Heritage Preservation Act, the 2015 Development of Tourism Act, the 2015 Act of Underwater Cultural Heritage Preservation, the 2015 Act of Fisheries, the 2013 Act of Wetland Conservation, and the 2015 Act of Coastal Zone Management. In particular, this article analyzes the legal regime issues related to marine protected areas in Taiwan and their institutional arrangements. Furthermore, to obtain actual field data, this study used interviews. This interview used a semi-structured questionnaire involving fifteen participants consisting of five staff from the Marine National Park Headquarters, three staff from the Council of Agriculture, and seven staff from the Ocean Affairs Council. This interview is to find out actual issues related to marine conservation and institutional arrangements in Taiwan. All findings were interpreted, analyzed, and presented qualitatively.

3. Current Legal Regime Regarding Taiwan's Marine Protected Area

The Taiwanese Government performs most of its management and conservation efforts by establishing protected areas.¹² Terrestrial-based administrative laws are implemented directly in sea zones due to the lack of legally binding marine regulations. There are several kinds of protected areas and pertinent administrative laws.

Scenic areas and national parks are managed under the 2010 Law of National Park's authority as a legal basis for protecting unique natural landscapes, preservation of historic sites, and habitats of wild flora and fauna. Article 3 of this law states that the competent authority to regulate national parks is the Ministry of Interior.

¹⁰ Shiau-Yun Lu, Cheng-Han Shen and Wen-Yan Chiau. (2014). "Zoning Strategies for Marine Protected Areas in Taiwan: Case Study of Gueishan Island in Yilan County, Taiwan". *Marine Policy*, 48(1): 21-29.

¹¹ Jyun-Long Chen *et al.* (2014). "Developing A Co-Management Financing Mechanism to Enhance the Financial Sustainability of Marine Protected Areas in Taiwan". *Marine Policy*, 48(1): 126-133.

¹² Taiwan's Forestry Bureau. (2016). *The Current Status of Protected Areas*. Available online from: <https://conservation.forest.gov.tw/EN/0001640>. [Accessed August 16, 2020].

Another category of administrative laws and protected areas are included in the 2013 Act of Wildlife Conservation, which allows wild reserves to protect wild animals and their habitats. In general, this Act of Wildlife Conservation has the objective of protecting species diversity, maintaining the balance of natural ecosystems, and preserving wildlife in Taiwan. Council of Agriculture hereinafter referred to as the National Principal Authority is a government institution that is competent with this Act.

Then, the 2011 Cultural Heritage Preservation Act protected historical and cultural heritage such as artifacts, historical sites, antiques, and protected landscapes. In addition, this Cultural Heritage Preservation Act aims to preserve cultural heritage, promote cultural diversity, and enrich spiritual life. The government institution that has the primary responsibility for preserving cultural heritage is Taiwan's Ministry of Culture.

Besides, the 2015 Development of Tourism Act is a tool to protect ecological or cultural environmental reserves for tourism purposes. An ecological or cultural environment reserve is defined as a unique natural monument that cannot reconstruct artificial, cultural reserves or specific ecological as important prehistoric relics and ecological environment of flora and fauna, which needs appropriate protection. The Ministry of Transportation and Communication is the primary agency authorized to implement this Act.

Subsequently, the 2015 Act of Underwater Cultural Heritage Preservation is an instrument to protect underwater cultural heritage protection areas. This Act also aims to promote Taiwan's characteristics as an 'Ocean Nation' and build historical and national relations. The competent authority to enforce this Act is the Taiwan's Ministry of Culture.

Furthermore, to manage commercially important species' catches, the 2015 Act of Fisheries regulates fisheries conservation areas. This Act aims to conserve and rationally utilize marine resources to increase fishery productivity and increase fishers' living standards. The institution responsible for implementing this Act is the Taiwan's Council of Agriculture.

Finally, to conserve biodiversity and promote ecological conservation of wetlands and wise use, the Taiwan Government has enacted the 2013 Act of Wetland Conservation. Tidal zones and areas of sea waters whose depth is the lowest at high tide and does not exceed six meters are categories of wetlands in this Act. The Ministry of Interior, through the Construction of Planning Agency, is responsible for enforcing this Act.

The seven Taiwanese legislation related to marine protected areas involves four government agencies responsible for the type of protected area. Table 1 summarizes these various government agencies' authorities based on the types of protected areas and their objectives.

This discussion explained that the arrangement of protected areas on land is used for marine protected areas. Several countries outside Taiwan, such as the United States and Sweden, have also made similar arrangements.¹³ This categorization follows the

¹³ James Lindholm and Brad Barr. (2001). "Comparison of Marine and Terrestrial Protected Areas under Federal Jurisdiction in the United States". *Conservation Biology*, 15(5): 1441-1444. See also Kjell Grip and Sven Blomqvist. (2018). "Establishing Marine Protected Areas in Sweden: Internal Resistance Versus Global Influence". *Ambio*, 47(1): 1-14.

protected area guidelines of the International Union for Conservation of Nature (IUCN).¹⁴

Table 1. Taiwan's Legal Regime regarding Protected Areas

Protected Area Types	Goals	Legislations	Competent Institutions
Scenic areas and National parks.	Natural resources conservation.	The 2010 Law of National Park.	Interior Ministry.
Cultural heritage protection zones.	Cultural values and historical conservation.	The 2011 Cultural Heritage Preservation Act.	Culture Ministry
Wildlife reserves	Important wild animals and their habitats protection	The 2013 Act of Wildlife Conservation	Agriculture Council.
Ecological and cultural environmental reserves.	Tourism promotion.	The 2015 Development of Tourism Act.	Transportation and Communications Ministry.
Fisheries conservation zones.	Manage catches of commercially important species.	The 2015 Act of Fisheries	Agriculture Council.
Underwater cultural heritage protection zones	Underwater cultural Values and historical conservation.	The 2015 Act of Underwater Cultural Heritage Preservation	Culture Ministry.
Areas of wetland	Food-chain in wetlands and biodiversity conservation.	The 2013 Act of Wetland Conservation.	Interior Ministry.

Source: Primary data, 2020 (Edited).

4. Current Legal Issues of Marine Protected Areas in Taiwan

There are at least two main issues related to the implementation of Taiwan's existing legislation on marine protected areas. First, the existing legislation in Taiwan is based on terrestrial protected areas and does not consider marine conservation. Current laws make it difficult for significant marine conservation efforts because the management of resources at sea and land is different. For instance, Article 9 of the 2010 Law of National Park stipulates that the Government of Taiwan can take over private land ownership to implement the national park plan under the law. Then, in Article 10 of the Law stipulates that property owners are entitled to compensation for land used for national park planning and its value based on the parties' agreement. The issue is that the concept of private land has no legal basis in the Taiwanese marine law regime's jurisdiction.

¹⁴ J. Day et al. (2000). *Guidelines for Applying the IUCN Protected Area Management Categories to Marine Protected Areas*. Gland: IUCN Publishing, p. 22.

Problems in extending the application of terrestrial-based protected area laws to the sea are also found in other legislation. Article 8 of the 2013 Act of Wildlife Conservation states that any construction and land use in wildlife habitats must not interfere with ecological functions and affect habitat. If required, the government can require project owners or landowners to perform an Environmental Impact Assessment. Subsequently, Article 11 of this Act regulates that every landowner or purchaser must provide land for conservation of wildlife habitat following government regulations.

Furthermore, in the 2011 Cultural Heritage Preservation Act, Article 21 states that owners or managers of historical buildings must manage and preserve them properly. The government can provide consultations on the management and preservation of these structures if necessary. In essence, the owner and the government must work together to protect cultural and historic heritage values.

Also, Article 14 of the 2015 Development of Tourism Act regulates that the government can take over private land or public use to develop tourism. Article 15 regulates cooperation between the government and private landowners for tourism purposes. Article 16 stipulates that the government must notify the landowner in writing to take precise measurements of the coverage of designated scenic spots and that the survey must not destroy crops, wood, or other objects on privately owned land. These three articles of this Act conclude that the Taiwan Government can apply for privately owned land to designate scenic spots.

However, these activities on land are dissimilar from those at sea.¹⁵ Currently, Taiwan does not have suitable environmental regulations or specific legislation to control activities in marine protected areas, such as fishing, swimming and diving. Some of the concepts and conservation mechanisms applied to land systems are difficult to use in the sea. It always needs modification because marine and terrestrial species and ecosystems have different functions.¹⁶ The difference is that there is a greater chance of distribution at the stage of planktonic distribution in most marine taxonomies than land species. It has different implications for management and conservation.¹⁷

The second issue is that the maritime law regime in Taiwan does not emphasize marine conservation efforts. For instance, the 2015 Act of Underwater Cultural Heritage Preservation and the 2015 Act of Fisheries have many articles that regulate oceans, but both of this legislation focus primarily not on protecting and preserving marine resources. The underwater cultural heritage protection zone is a forbidden zone for carrying out activities such as exploration or exploitation of minerals, explosives, or wastewater disposal. However, the establishment of the underwater cultural heritage protection zone does not aim to preserve the ecosystem and marine biodiversity, but rather to preserve human-made underwater cultural heritage sites. Besides, Article 45 of the 2015 Act of Fisheries concludes that the establishment of fisheries conservation areas aims to solve significant species decline problems.

¹⁵ Mark H. Carr *et al.* (2003). "Comparing Marine and Terrestrial Ecosystems: Implications for the design of Coastal Marine Reserves". *Ecological Applications*, 13(1): 90-107. See also Nicole Shumway *et al.* (2018). "The Risks and Opportunities of Translating Terrestrial Biodiversity Offsets to the Marine Realm". *BioScience*, 68(2): 125-133.

¹⁶ *Ibid*, p. 93.

¹⁷ *Ibid*, p. 94.

Nevertheless, the purpose of establishing marine protected areas is to carry out conservation efforts in order to avoid permanent damage to marine ecosystems.¹⁸ Therefore, the goal of establishing marine protected areas in Taiwan is difficult to achieve through the Act of Fisheries. Likewise, the objectives of the Act of Underwater Cultural Heritage Preservation are basically to preserve sites, values, or objects that are specifically identified, which are different from the existing conservation goals in marine protected areas.

5. Institutional Arrangements

In 2007, the Taiwan Government established an institution, namely Marine National Park Headquarters, to perform marine conservation efforts.¹⁹ Currently, Marine National Park Headquarters manages two marine protected areas in Taiwan, namely Dongsha Marine National Park and The South Penghu Marine National Park. Marine National Park Headquarters also carries out the task of conducting research and monitoring natural resources in these two marine protected areas to strengthen marine biodiversity conservation and build a long-term ecological research network. Marine National Park Headquarters is merely an institution responsible for the conservation of the marine area.

Currently, the Marine National Park Headquarters has three central administrative policies. First, conducting collaborations in international marine research and programs for local participation. Marine National Park Headquarters is developing an international marine research station to invite international research groups to conduct marine studies and facilitate international cooperation opportunities. This effort also sets a model for peace development and regional cooperation in the South China Sea. The institution also conducts stakeholder consultation and engagement to institutionalize participatory management mechanisms and reach a vision of sustainable local operations and development. The second is to increase environmental conservation efforts. Marine National Park Headquarters conducts not only scientific research but also provides environmental education and future ecotourism. Environmental conservation efforts to be achieved include fostering talents in marine conservation and technology and applying long-term ecological research. The third is to promote ecotourism activities. Based on community participation principles,²⁰ the use of natural resources, and marine biodiversity conservation principles, this institution designs activities suitable for local conditions, namely the national ecotourism park, a project to conserve the natural environment through residents' cooperation.

¹⁸ Yi-Che Shih and Wen-Yan Chiau. (2009). "Planning A Marine Protected Area at Chinwan, Penghu, Taiwan". *Ocean & Coastal Management*, 52(8): 433-438. See also John Roff and Mark Zacharias. (2011). *Marine Conservation Ecology*. New York: Earthscan, p. 17; and Pedro Afonso *et al.* "Effects of Marine Protected Areas on Coastal Fishes Across the Azores Archipelago, Mid-North Atlantic". *Journal of Sea Research*, 138(1): 34-47.

¹⁹ John W. McManus, Kwang-Tsao Shao, and Szu-Yin Lin. (2010). "Toward Establishing a Spratly Islands International Marine Peace Park: Ecological Importance and Supportive Collaborative Activities with an Emphasis on the Role of Taiwan". *Ocean Development & International Law*, 41(3): 270-280.

²⁰ Chia-Chi Wu and Huei-Min Tsai. (2009). "Capacity Building for Tourism Development in A Nested Social-Ecological System—A Case Study of the South Penghu Archipelago Marine National Park, Taiwan". *Ocean & Coastal Management*, 123(1): 66-73.

However, the capacity of this institution to undertake marine protection efforts is still very limited.²¹ The reason is, first, Marine National Park Headquarters only manages maritime issues in the marine national park area. Second, the Marine National Park Headquarters structure is under the national park's institutional structure and is the lowest in Taiwan's bureaucratic government hierarchy. Hence, although the Marine National Park Headquarters has the authority to formulate zoning plans for the new marine national park, it is the highest authority who makes the final decisions.

6. Possible Solutions

The thing that needs to be considered in the future is how to regulate the separation of terrestrial and marine affairs, which is currently the central issue of marine conservation in Taiwan. Some scholars have argued the effectiveness of current legislation regarding institutional arrangements for marine protected areas.²² In 2015, a solution was offered by enacting five legislation related to marine conservation. The Taiwan government has enacted one maritime law and four types of maritime organization legislation:

- the 2015 Act of Coastal Zone Management
- the 2015 Act of Organization of National Academy for Ocean Research
- the 2015 Act of Ocean Affairs Council
- the 2015 Act of Organization of Coast Guard Administration
- the 2015 Act of Organization of Ocean Conservation Administration

These five types of legislation regulate the separation of marine and coastal affairs from land-based regulatory systems and recognize ocean conservation. Enforcing these five legislations will enhance Taiwan's marine conservation and governance efforts. Several marine management and conservation issues occur because of mistakes in using the provisions of terrestrial-based legislation for the sea.

The provisions in the 2015 Act of Coastal Zone Management have many things concerning efforts to prevent damage, protect, and restore resources in the marine and coast.²³ Implementing this Act of Coastal Zone Management can solve problems in marine conservation and governance. For instance, Article 1 defines this legislation's objectives: to ensure there is no loss of natural coast, promote sustainable coastal zone development, and implement integrated coastal zone management. Then, article 12 of this Act states that coastal zone conservation functions to protect significant aquatic resources, ecology, and essential habitat corridors for valuable rare animals or plants and recreational zones and unique landscape resources. Also, article 13 states that coastal conservation planning must consider conservation goals and targets, the scope of coastal conservation zoning, compatible and prohibited uses, and monitoring and restoration

²¹ Kuei-Chao Chang Hwung-Hweng Hwung, and Ching-Ta Chuang. (2012). "An Exploration of Stakeholder Conflict Over the Taiwanese Marine Protected Area". *Ocean & Coastal Management*, 55(1): 36-41.

²² Nien-Tsu Alfred Hu. (2012). "Taiwan's Oceans Policymaking: Its Development and Assessment". *Coastal Management*, 40(1): 195-208. See also Kun-Lung Lin *et al.* (2013). "The Taiwanese Institutional Arrangements for Ocean and Coastal Management Twenty Years after the Rio Declaration". *Coastal Management*, 41(2): 134-149; and Chi-Ming Wang *et al.* (2014). "Institutional Arrangements for the Management of Marine Protected Areas in Taiwan". *Ocean & Coastal Management*, 98(1): 62-69.

²³ Chung-Ling Chen, Tuey-Chih Lee, and Chien-HoLiu. (2012). "Beyond Sectoral Management: Enhancing Taiwan's Coastal Management Framework Through A New Dedicated Law". *Ocean & Coastal Management*, 169(1): 157-164.

methods. This legislation is an essential start in developing the maritime law regime in Taiwan, although the conservation arrangements in coastal and marine areas differ slightly.

The next solution is the institutional strengthening of the Ocean Affairs Council, where this institution has an institutional hierarchy in the marine sector that is higher than the Marine National Park Headquarters. Council of Ocean Affairs also has a more comprehensive additional institutional design than the Marine National Park Headquarters to regulate marine affairs²⁴, although separate existing agencies will regulate shipping and fisheries affairs. In improving marine conservation and governance matters, the Council of Ocean Affairs has a more powerful political influence than the Marine National Park Headquarters.

However, the Taiwan Government has been postponing the implementation of the Act of Ocean Affairs Council since 2016. They have not yet determined the future implementation of this legislation. The postponement of implementing this legislation is related to the political process, namely the replacement of a new president and the change of new political parties in power in 2016. In Taiwan, different presidents and ruling political parties often have different priorities in national development. Therefore, currently, the development of Taiwan's marine conservation law regime has been temporarily halted.

7. Conclusion

There is still a long way to go for the conservation law regime, especially in the marine sector, in Taiwan. The establishment of protected areas is a conservation management effort carried out in Taiwan. Currently, Taiwan has seven primary legislation regulating protected areas, namely the 2010 Law of National Park, the 2013 Act of Wildlife Conservation, the 2011 Cultural Heritage Preservation Act, the 2015 Development of Tourism Act, the 2015 Act of Underwater Cultural Heritage Preservation, the 2015 Act of Fisheries, and the 2013 Act of Wetland Conservation. Recently, Taiwan has two significant problems in its marine conservation legal regime. First, current conservation efforts apply the legal basis for protected areas used on land for the marine areas. It is a primary issue of marine conservation efforts in Taiwan because there are differences in marine and land resources management. Besides, activities or projects carried out on land are also different from those at sea. The second issue is that Taiwan does not focus on marine conservation in its marine law regime. Taiwan's maritime legislation does not emphasize protecting and conserving marine resources. In the institutional arrangement sector, currently, Marine National Park Headquarters is the only institution that has the main task of preserving marine areas. However, this institution has little capacity for conservation efforts because its jurisdiction is limited to a marine national park, and its hierarchical structure is the lowest in the institutional system in Taiwan. The solutions offered are, first, implementing five legislation related to marine conservation, especially the 2015 Act of Coastal Zone Management. Second, strengthen the institutional Ocean Affairs Council because they have additional institutional designs that are more comprehensive and have more substantial political influence than the Marine National Park Headquarters.

²⁴ Yi-Che Shih. (2020). "Taiwan's Progress Towards Becoming An Ocean Country". *Marine Policy*, 111 (1): 1-7.

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Conflict of Interest Statement:

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