

Chapter 8

Potentially Polluting Wrecks in the Blue Pacific



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8.1 Introduction to Potentially Polluting Wrecks in the Pacific

Marine pollution is a global and transboundary issue that negatively affects the environment, people, and coastal economies around the world. It is widely recognised as one of the four major threats to the world's oceans, along with climate change, habitat destruction and over-exploitation of living marine resources (SPREP, 2020). Since the large-scale introduction of oil-fueled shipping in the 1930s, marine pollution incidents have occurred in practically all coastal waters across the globe. In the Pacific Region the greatest concentration of these incidents stemmed from the loss of over 3800 ships during the World War II (WWII) (SPREP, 2003a, b) (Fig. 8.1). At the time of their loss, these ships contained as many as 1.5 billion gallons of petrochemicals, and hundreds of thousands of tons of explosive ordnance (Michel et al., 2005), an unknown amount of which remains in these wrecks today.

In the 'Blue Pacific', the health of the ocean is fundamental to the sustainability of all aspects of island life. The importance of coastal and marine environments to every aspect of the lives of Pacific islanders cannot be overstated, and the impacts

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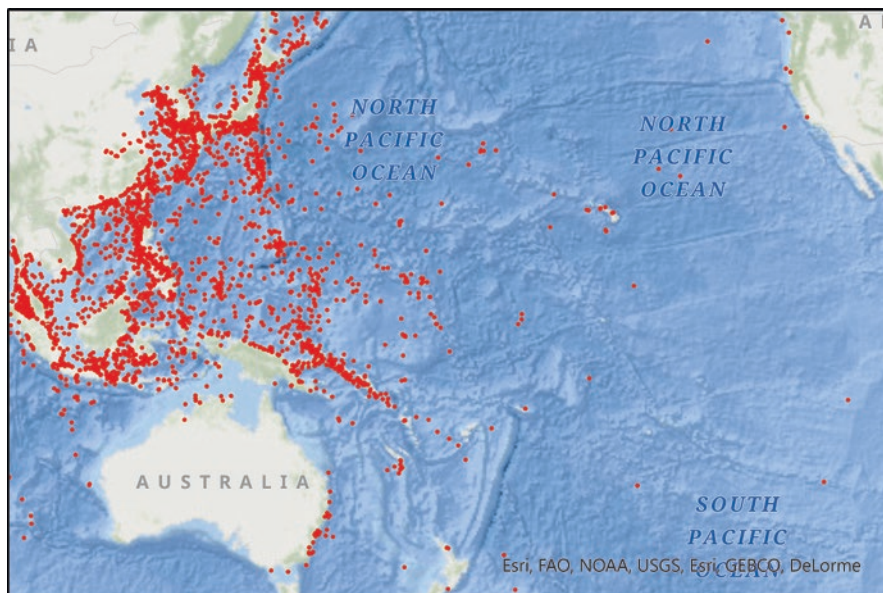


Fig. 8.1 Map illustrating the locations of WWII shipwrecks in the Asia Pacific region. (Attribution: © Paul Heersink, 2022)

of marine spills including those from shipwrecks constitute a major concern for Pacific Island peoples. Significantly, despite initiatives to assist Pacific Island countries and states with marine spill prevention and response, many of these nations are underprepared for the impending spills from the potentially polluting wrecks (PPW) within their waters.

The Pacific War was the largest maritime endeavor in human history. In 2003 the Secretariat of the Pacific Regional Environment Programme (SPREP) commissioned the creation of the ‘SPREP Pacific WWII Shipwreck Database’ which contained entries for 3855 vessels totaling over 13 million tons, ranging from aircraft carriers to battleships and including over 330 tankers and oilers. This database included the country of origin and therefore the ownership of the sunken vessels with 14 nations represented across both military and civilian merchant vessels. Significantly, of the 3855 vessels, 3326 are Japanese (86%), 415 are United States of America (10%), with the other 12 nations making up just 4% of the total (SPREP, 2003a).

While the exact volume of oil still held by the 3855 WWII vessels wrecked across the Pacific is unknown, researchers have estimated that this could range from between 190 million and 1.5 billion gallons (Michel et al., 2005). It is expected that the majority of oil within these WWII wrecks will be heavy fuel oil along with quantities of diesel, lubrication oils, and smaller amounts of aviation fuels and gasoline (Talouli et al., 2009). In the majority of the larger vessels sunk during the Pacific

conflict, the fuel oil consisted of a mixture of both non-persistent and persistent oils. This combination appears to consist of bunker oil (No. 6 fuel oil) and marine diesel (No. 2 fuel oil) (Talouli et al., 2009). A significant factor in the evaporation of leaking fuel in the tropical Pacific is the high water and ambient temperatures of the region. Average Pacific air and water temperatures are high between 25–32 C degrees with often less than 10 C degree variance between night and day. This combined with predominantly windy conditions would accelerate the evaporation rate of the spilled fuel compared to cooler less windy locations.

As described by Talouli (et al., 2009), under the spill conditions in most central and southern Pacific locations, if released, the heavier bunker oil from WWII wrecks would behave in a manner similar to conventional #6 fuel oils. This heavy oil has a slightly lower density than full-strength seawater at tropical temperatures and is likely to float and remain liquid during the early stages of a spill. Some components will dissolve into the water, and the light fractions will be lost by evaporation, but what remains floating will initially form contiguous slicks. Eventually the slicks will break up into widely scattered fields of pancakes and tar-balls, which can persist over large distances and concentrate in convergence zones. The heavier persistent components can form emulsions in rough seas or manifest as tar-balls on coastlines, or even travel great distances across the open sea. Because of the higher viscosities of these oils, the tar-balls may be more persistent than expected for conventional crude oils, potentially reaching intertidal zones if close to the shore and settle onto sediments.

In contrast to the heavy fuel, diesel oil leaking from WWII wrecks would be expected to undergo rapid weathering, with the majority of any diesel spilled in tropical Pacific waters being either dispersed into the water column or evaporated within a span of 12–24 h. This does not negate the potential ecological impacts on aquatic life, coral reefs, or potential effects on wildlife, however. It indicates that the diesel oil would be relatively quickly removed from the water surface following its release. Once dispersed or dissolved within the water column, diesel oil could still exert notable effects on intertidal life and fisheries, while also being harder to detect or clean up.

The impacts of oil and diesel spills from PPW in the Pacific are wide ranging and threaten marine ecosystems, cultures and livelihoods across the region (SPREP, 2019). As noted by Talouli (et al., 2009) such impacts range from:

- The modification of natural habitats through both physical and chemical means,
- The smothering of fauna and flora.
- Both lethal and sub-lethal toxic impacts on fish, as well as other wildlife and plant life.
- Short-term and long-term shifts in biological communities
- Contamination of edible species, particularly fish and shellfish.
- The inability to utilise recreational areas like sandy beaches.
- Decline in demand for fisheries and tourism.

- Contamination of boats, fishing equipment, boat ramps, jetties, and related infrastructure.
- Temporary halt in operations for industries reliant on the marine environment.

The vast majority of PPW across the Pacific date from WWII and have been submerged for at least 79 years. Over this period, it is estimated that they have experienced a corrosion rate of approximately 0.1 mm per year, putting them at an increasing risk of structural failure (Melchers, 2003, 2013; Macleod, 2016). The ongoing corrosion of these sites, as the wrecks are steadily approaching inevitable collapse releasing any remaining pollutants they contain. Corrosion surveys undertaken on the PPW in Chuuk Lagoon in the Federated States of Micronesia revealed that although these wrecks are corroding at a rate 26–30% slower than wrecks in the open ocean at similar depths (MacLeod, 2003), they are projected to experience significant collapse within the next 3 years (2023–2026), leading to the release of oil into the surrounding marine environment (Macleod et al., 2011; Macleod, 2016). Furthermore, this corrosion and subsequent damage are likely to be exacerbated by more severe weather events associated with climate change (Macleod et al., 2017), with reports already indicating partial collapse in several wrecks (Aisek G 2023, pers. comm., 3 November).

8.2 History of PPW Management in the Pacific

The first formal recognition of the threat of PPW in the Pacific came from the Solomon Islands Government in 1999 when they requested the South Pacific Applied Geoscience Commission (SOPAC) to conduct a contamination risk assessment of WWII sunken ships and aircraft in Iron Bottom Sound, Solomon Islands (Maharaj, 1999). This study funded by the United Nations Development Programme found that the wrecks ‘represent a real source of pollution to the natural environment’ through the leakage of oils and fuel, leaching of trace element and heavy metals from paints, corroded aircraft and ships and munitions. The study put forward recommendations for future work to assist in the sustainable planning and management of these PPW. This recommendation was furthered by the Secretariat of the Pacific Regional Environment Programme (SPREP) who proposed a project to remove the oil from all WWII shipwrecks in the Solomon Islands ‘where feasible and practicable’ (SPREP, 1999). Unfortunately, neither the recommendations put forward by SOPAC nor the oil removal project proposed by SPREP were eventuated.

At the 12th assembly of the South Pacific Regional Environment Programme (SPREP) in September 2001, the USS *Mississinewa* incident (described below), prompted member countries to request a regional plan for addressing marine pollution from WWII shipwrecks. This responsibility fell to the Pacific Ocean Pollution

Prevention Programme (PACPOL) within SPREP. A preliminary version of the Regional Strategy was formulated and presented during the 13th SPREP Meeting in July 2002 (Nawadra, 2002). The subsequently approved Strategy encompassed five steps, covering the identification and characterisation of wrecks, conducting a Generic Risk Assessment Ranking, and agreeing on Intervention Assistance (Steps 1 to 3). It also included specific Site Based Risk Assessment and Remedial Action Implementation (Steps 4 and 5) (SPREP, 2003b). This strategy was subsequently advanced through the creation of a database identifying 3855 WWII shipwrecks in the Asia-Pacific region (SPREP, 2003a). Despite the evident advantages of approaching the issue of PPWs as a multilateral regional group, during the 14th SPREP Meeting in Apia, Samoa, in September 2003, it was decided that the threat of PPWs would instead be addressed through bilateral cooperation between the Coastal State and the Flag State, with SPREP offering assistance upon request. Subsequent to this decision information about these PPWs has been further refined (Michel et al., 2005; Monfils, 2005; Monfils et al., 2006). However, regional progress has been slow, with much of the work conducted through bilateral agreements in an ad hoc manner (Talouli et al., 2009).

8.3 U.S Government PPW Interventions in the Pacific

As noted above, 415 U.S ships were sunk in the Pacific accounting for 10% of the WWII Pacific losses. Despite this relatively large number of wrecks, the US Government has only acted to remove oil from three legacy wrecks across the region.

8.4 USS *Mississinewa*

Between July and August 2001, the wreck of the United States Navy oiler USS *Mississinewa* (1943–1944) leaked approximately 24,000 gal of oil into Ulithi Lagoon, on the island of Yap in the Federated States of Micronesia (FSM) (Gilbert, 2001; Gilbert et al., 2003). In response, a state of emergency was declared in Yap and a ban on all fishing activities in the affected area was enforced. Significantly, the spill led the FSM Government to request assistance from SPREP under the Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN) adopted in October 2000 (Gilbert, 2001). This request was the first of its kind and saw SPREP's Marine Pollution Advisor dispatched to Yap to compile an independent study of the wreck and the environmental impacts of the recent oil spill. This assessment concluded that the wreck's extensive oil cargo posed an unacceptable and ever-present risk to the marine environment of Ulithi Lagoon and should be offloaded as a permanent solution (Gilbert, 2001). Following this report the Governor of Yap contacted the

U.S. Embassy in FSM and requested that the remaining oil from USS *Mississinewa* be removed. In response the Embassy initiated discussions with other federal agencies, including the U.S. Coast Guard (USCG) District 14 (Honolulu) and USCG headquarters (Washington), the National Oceanic and Atmospheric Administration (NOAA), the Environmental Protection Agency (EPA), and the Department of the Interior (DOI). Following these discussions, the U.S. Navy conducted a substantial operation to evaluate the wreck and execute plans for oil extraction. This undertaking required the deployment of various vessels, barges, and personnel, resulting in salvage costs of around \$6 million USD (Naval Sea Systems Command, 2003). Between January and March 2003, all readily accessible oil was successfully removed from the vessel. It is estimated that approximately 1.8 million gallons of oil and diesel fuel were successfully recovered. Interestingly, this fuel was subsequently shipped to Singapore where it was sold.

8.5 Ex-USS *Chehalis*

In October 1949 ex-USS *Chehalis* (a WWII-era gasoline tanker) sank in Pago Pago Harbor, American Samoa. In 2007 after increasingly frequent reports of oil and fuel leaks coming from the vessel a commercial survey team conducted an inspection. Their findings indicated that approximately 40,000 gallons of motor gasoline and 70,000 gallons of aviation gasoline were still present onboard. Based on this survey, American Samoa and the U.S. Environmental Protection Agency (EPA) jointly petitioned the U.S. Coast Guard (USCG) to take necessary measures for the removal of the remaining fuel from ex-USS *Chehalis*. In March 2010, a multiagency effort involving the US Coast Guard, US Navy Supervisor of Salvage (SUPSALV), the National Oceanic and Atmospheric Administration (NOAA), National Pollution Fund Center, and the EPA commenced operations to safely remove fuel from the vessel. This endeavor led to the extraction of 54,505 gallons of fuel, which was subsequently transported to Systech Environmental Corporation in Fredonia, Kansas where it underwent recycling in their cement-making kiln.

8.6 Ex-USS *Prinz Eugen*

In 2017, the U.S. Indo-Pacific Command (USINDOPACOM) enlisted the services of SUPSALV to conduct an extensive diver survey of the sunken WWII-era, former German cruiser, ex-USS *Prinz Eugen*, situated in Kwajalein Atoll within the Republic of the Marshall Islands (RMI). The primary objective of this initial survey was to assess the current condition of the hull and gather essential data regarding the presence and volume of any remaining oil in the vessel's tanks, as there was

growing evidence of oil seepage from the wreck. Subsequent to the survey, it was determined that a removal operation was required to mitigate the potential for a significant oil release from the deteriorating wreck as such an event could have adverse effects on the marine ecosystem, the neighboring human population, and U.S. Army property.

Given that the Republic of the Marshall Islands government possessed ownership rights to the wreck, the U.S. government needed to obtain both approval from the Republic of the Marshall Islands and authorisation from Congress to allocate U.S. funds for the disposal of a foreign-owned vessel. A Diplomatic (DIP) Note was executed, establishing an accord between the Government of the Republic of the Marshall Islands (GRMI) and the U.S. Government (USG). This agreement waived the environmental prerequisites for extensive assessments, consultations, and permitting as outlined in the 1986 Compact agreement. It also indemnified the USG from any liabilities arising from the ex-USS *Prinz Eugen* and granted the USG permission to extract and properly dispose of the oil from the wreck, despite the Republic of the Marshall Islands' ownership. In October of 2018, a collaborative team led by the U.S. Navy successfully completed the extraction of 229,000 gallons of oil from 173 fuel tanks on the wreck.

8.7 Japanese Government Interventions in the Pacific

Despite the vast majority of PPW dating from WWII in the Pacific being of Japanese origin (86%), the Japanese Government has not formally undertaken any proactive steps to address the risk these PPWs pose. Instead, the Japanese Government, through their Ministry of Foreign Affairs, has funded a small number of projects undertaken by the Japanese Mine Action Service (JMAS), a Japanese NGO on PPW in Palau and Chuuk.

The work of JMAS in Palau began in December 2012 and involved investigating the underwater explosive remnants of WWII by former members of the Japan Maritime Self Defence force employed by JMAS. In relation to PPW this work mainly revolved around the recovery and safe destruction of depth charges from a shipwreck locally known as the 'Helmet Wreck'. In 2015 the depth charges were found to be leaking their contents, an explosive chemical known as picric acid, which was subsequently polluting the surrounding waters (UNESCO, 2017). In 2019 JMAS partnered with the Norwegian People's Aid to begin removing and destroying the 165 depth charges on the wreck, with this work continuing into 2022. While no report has been found, it is believed that the JMAS team also undertook some surveys of PPW in Palau and are reported to have identified at least one wreck where oil was leaking (Takagi M. 2023, pers. comm., 2 June).

In 2017 JMAS began the 'Oil Leakage Countermeasures from WWII Wrecks of FSM Truk Lagoon Marine Area' project. This work was funded through a financial

grant of USD \$857,899 from the Government of Japan and was scheduled to run for 3 years from June 2017 to June 2020. This project was designed around five specific activities namely, (1) identifying the location of the target wrecks, (2) generating 3D images of the wrecks, (3) clarifying the current condition and cargo of the wrecks, (4) understanding the oil leak conditions of the wrecks and (5) implementing measures to prevent oil leaking and to remove oil (Inoue K. 2019, pers. comm., 20 July). This work identified that approximately 43,000 gallons of oil remained trapped inside the hulls of the 11 wrecks that were surveyed by the JMAS team. In September 2021 the project was extended with an additional USD \$741,206 provided by the Government of Japan. A key priority of the JMAS work was removing pockets of oil trapped inside the wrecks and between May 2017 and June 2023 JMAS divers were able to remove approximately 10,000 gallons of oil from five of the 11 wrecks (Takagi M 2023, pers. comm., 10 June). Unfortunately, no provision was made in the project for funding the export and disposal of the collected oil from Chuuk and it is currently being stored in a Government warehouse while the quoted USD \$107,000 required to export it is raised by the Chuuk or FSM Government (Mori B. 2023, pers. comm., 31 October). In June 2023 JMAS withdrew their team from Chuuk and presently it is unclear if they will return. The JMAS mission has started to reveal the scale of the threat these PPW pose and has highlighted the urgent need for increased collaborative action in Chuuk to address the rest of the wrecks, and the oil sources beyond the reach of JMAS's capabilities.

8.8 Current Situation of PPW in the Pacific

While the remediation of USS *Mississinewa*, ex-USS *Chehalis* and ex-USS *Prinz Eugen* were successful, and the JMAS projects in Palau and Chuuk represent practical contributions, the threat PPWs pose continues to be identified as a key issue by Pacific Leaders at international assemblies. In 2019 ministers from 21 Pacific countries reaffirmed their recognition of the 'significant environmental threat' that the wrecks of WWII ships still pose to the Pacific (SPREP, 2019) and acknowledged the need to address PPW with an agreed regional approach that addresses both environmental conservation and community resilience. This message was again reiterated by the Pacific Islands Forum at the 2020 United Nations Summit on Biodiversity where the Prime Minister of Tuvalu called for 'the reduction and elimination of any threat posed to our people and ecosystems by pollution including nuclear waste, radioactive and other contaminants, shipwrecks and World War II relics'. In September 2023 the Director General of SPREP speaking at the international oil spill conference for the Asia-Pacific region once again reiterated the need for a proactive multilateral approach to mitigating the threat that PPWs pose to the region.

8.9 Case Study: Potentially Polluting Wrecks in Chuuk Lagoon

Chuuk Lagoon, formerly known as Truk Lagoon, is an atoll located in the central Pacific. It is situated approximately 1800 km (about 970 nautical miles) northeast of New Guinea and is a part of Chuuk State within the Federated States of Micronesia (FSM). The lagoon is encircled by a protective reef that spans 225 km (about 140 miles) and encompasses a natural harbor measuring 79 by 50 km (about 43 nautical miles by 27 nautical miles), with a total area of 2130 km² (about 820 square miles). Chuuk Lagoon is inhabited by around 53,000 Chuukese people, making it the most densely populated region in the Federated States of Micronesia.

During World War II, it served as a significant Japanese base for their combined fleet and played a crucial role as a strategic advance base for Japan's expansion into the southern Pacific. From February 1944 to August 1945, the U.S. Navy conducted extensive bombing campaigns, resulting in the destruction of airstrips, military facilities, and the sinking of over 50 ships. This effectively neutralised the base and played a pivotal role in the outcome of the war. Today, Chuuk Lagoon contains one of the largest concentrations of potentially polluting shipwrecks identified in the Pacific Ocean; 19 of the wrecks have been identified as posing significant environmental risks due to the volumes of toxic fuel oil and unexploded ordnance they hold (Carter et al., 2021) (Fig. 8.2).

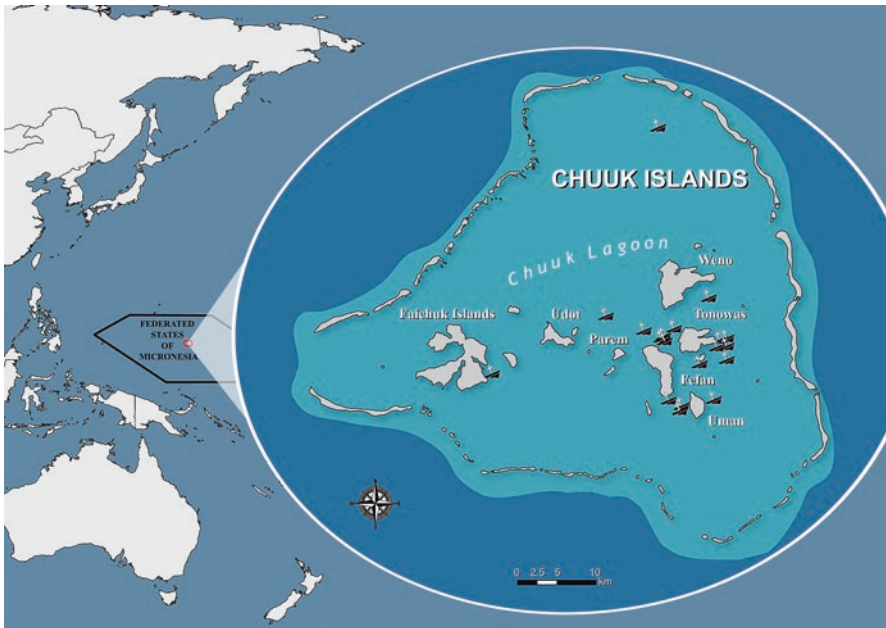


Fig. 8.2 Location map of Chuuk Lagoon showing the location of the PPW identified as posing significant environmental risks

In 1976, Earle and Giddings (1976: 603) first brought to light the issue of fuel leakage from a sunken vessel within the Lagoon, specifically emphasising the case of the *Amagisan Maru*. Over the next 30 years in addition to diesel and oil fuel, reports indicated that aviation gasoline was also detected seeping from drums on the armed merchant transport *Kiyosumi Maru* (Hodson, Colin 2001; pers. comm. Bill Jeffery). Subsequently, in July 2006, aerial surveys revealed that the passenger-cargo ship *San Francisco Maru* and the tanker *Hoyo Maru* were experiencing leakage (Osiena, R. Chuuk Director Department of Marine Resources, 2006 pers. comm. to Bill Jeffery). Over the years, several other sites have experienced fuel and oil leaks, with surface slicks being utilised by Chuukese dive guides to aid in locating these sites.

In 2009, reports emerged of oil seeping from the wreck of *Hoyo Maru*, prompting investigations by SPREP and the Chuuk EPA into nearby beaches for evidence of oil contamination. A subsequent report stemming from this investigation concluded that the PPW in Chuuk ‘pose a serious and immediate threat to the people, marine and coastal environments, tourism, and fisheries of the region’ (Talouli et al., 2009). Building on this assessment, in 2011, the President of Micronesia made an urgent appeal to the United Nations General Assembly for immediate assistance in addressing the WWII shipwrecks in Chuuk Lagoon, characterising them as ‘ticking environmental time bombs’. Despite this plea no support was forthcoming and in 2014 the issue was once again raised by Mr. Andrew Yatilman from the FSM Office of Environment and Emergency Management (OEEM), emphasising the critical need for assistance from partners and donors. He stressed the urgency of conducting a comprehensive assessment to ascertain the status, risks, and associated costs of retrieving the oil from those wrecks that posed, or had the potential to cause, the most significant harm.

On April 19, 2018, FSM made history by becoming the first country in the Pacific to ratify the UNESCO Convention on the Protection of the Underwater Cultural Heritage 2001 (UCH Convention). This convention is recognised as international best practice in managing underwater cultural heritage. Through this ratification, FSM has committed itself to a legally binding framework aimed at enhancing the identification, research, and safeguarding of their underwater heritage, including PPW, all while ensuring its long-term preservation and sustainability. While the UCH Convention provides overarching protection for all UCH items over 100 years old, it does not impede states from safeguarding historically, archaeologically, or culturally significant UCH items that are younger than 100 years old. This is exemplified by the case of the WWII wrecks in Chuuk, where both national and state legislations have been enacted to safeguard these wrecks, despite their age being less than a century. The stipulation is that any activities directed towards these UCH sites must adhere to the rules and annex outlined in the 2001 UNESCO Convention.

8.10 The FSM WWII Shipwreck Pollution Mitigation Project

In July 2021 the ninth Pacific Islands Leaders Meeting (PALM), co-chaired by Prime Minister Suga Yoshihide of Japan and Prime Minister Kausea Natano of Tuvalu, emphasised the importance of protecting the ocean from harmful plastics and threat posed by the presence of nuclear waste, radioactive and other contaminants, shipwrecks and World War II relics. As a result of this call the Government of Australia (GOA) offered assistance to FSM to support the efforts of Japan and FSM to address the risks from leaking PPW in Chuuk Lagoon. The assistance from the GOA took the form of a commitment of USD \$1.38 million to partner with SPREP and the Major Projects Foundation (MPF) to complement and enhance the work underway by JMAS in Chuuk Lagoon. This project began in March 2022 and will run for 3 years with the intention of achieving the following outcomes.

1. Reduce the likelihood and impacts of oil spills from PPW in Chuuk Lagoon by accelerating and enhancing the efforts of JMAS in removing trapped oil within wrecked vessels.
2. Strengthen the FSM's capacity to manage the threat of PPW in Chuuk Lagoon by providing technical information.
3. Enhance the contingency response capabilities of the FSM and Chuuk authorities to address oil pollution from PPW.

Due to the closure of the FSM borders during the COVID 19 pandemic, the project team was unable to visit Chuuk until November 2022. At this time work began between JMAS and MPF to improve the procedures for removing oil from the PPW in Chuuk and also to undertake the technical survey of the target wrecks.

While plans were being developed to further enhance the JMAS work their withdrawal from Chuuk in June 2023 has required a redesign of the project. Subsequent fieldwork by MPF in Chuuk in November 2023 focused on assessing the practicality of resuming oil removal operations and continuing with the technical survey of the wrecks. Significantly, the FSM WWII Shipwreck Pollution Mitigation Project is currently the only work being undertaken proactively on legacy PPW in the Pacific. The intention is for this project to provide a best practice template that can be utilised by other Pacific nations in their management of PPW within their waters.

8.11 Lessons and Conclusions

The threat that PPW pose to the Pacific has been recognised since at least the late 1990s with subsequent research focusing on identifying the scale of the threat (3855 wrecks), and the potential timing of their collapse (imminent). Organisations such

as SPREP have become acutely aware of the limited capacity for Pacific Island countries and Territories to respond to spills from PPW and note the impacts of these spills as being particularly devastating in a region so heavily intertwined with the ocean.

Despite repeated and urgent calls from the Pacific, both the U.S. (with 10% of the total PPW) and Japan (with 86%) remain committed to a reactive approach to this issue. When forced, the U.S. Government has invested substantial funds and expertise in removing oil from three PPWs in the region, but it has yet to adopt a systematic proactive approach to dealing with its remaining PPW. Similarly, the funding provided by the Japanese Government for work on their PPW in Palau and Chuuk falls far short of what is needed, especially in light of their large number of PPW across the Pacific Region.

Despite limited progress in addressing the PPW threat in the Pacific, several key issues have become apparent. Most legacy PPW fall under the principle of ‘sovereign immunity,’ belonging to the government in control of the vessel at the time of its sinking (Monfils et al., 2006). However, what remains unclear is who is responsible or authorised to remove pollutants from these wrecks, a question that has yet to be satisfactorily answered in the Pacific. Another challenge is what to do with the pollutants once they are removed. Pacific Island countries, including the Federated States of Micronesia, Solomon Islands, Republic of the Marshall Islands, and Papua New Guinea, already struggle with waste oil, and this situation would be greatly exacerbated by the addition of pollutants from PPW. Additionally, there is a significant cost associated with exporting waste oil from these countries for proper disposal, along with the need to ensure compliance with the Basel and Waigani Conventions regarding the export and import of hazardous waste.

The threat posed by PPW to the marine ecosystems, cultures, and livelihoods of the Pacific is evident and growing more pressing each day. The sheer scale of the problem and the complex challenges it presents necessitate a multilateral solution. Countries responsible for PPW must collaborate with impacted nations to secure the funding and expertise required to mitigate the impact of the region’s PPW and safeguard the Blue Pacific for future generations.

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