

Supplementary Material

Table S1: Frequency of participation in wreck diving

Descriptor / variable	Frequency (N)	Frequency (%)
Frequently	245	34.1
Occasionally	322	44.8
Rarely	86	11.9
<5 times	66	9.2
Total	719	100

Table S2: Motivations to wreck dive – Statistically significant differences

Cluster	Motivation factor	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	More important to	Less important to
History/heritage	Seeing historically significant shipwrecks	1	3.99	$\chi^2 = 15.878, df = 4, p = .003$	-	Males	Females
				$H(6) = 18.743, p = .005$	$p = .019$ $p = .007$	Japan	Australia United States
				$H(6) = 20.487, p = .002$	$p = .009$	Technical	Open water
				$H(3) = 41.278, p < .001$	$p = .003$ $p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive
					$p < .001$	Occasionally wreck dive	Rarely wreck dive
					$p = .006$	Wreck dived < 5 times	rarely
	Seeing artefacts	3	3.82	$\chi^2 = 17.264, df = 4, p = .002$	-	Males	Females
				$H(6) = 13.644, p = .034$	$p = .030$	Japan	United States
				$H(6) = 15.968, p = .014$	$p = .019$	Technical	Advanced open water
				$H(3) = 38.341, p < .001$	$p = .001$ $p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive
					$p = .003$	Occasionally wreck dive	Rarely wreck dive
					$p = .014$	Wreck dived < 5 times	Rarely wreck dive
	Researching & learning	6	3.40	$H(6) = 31.319, p < .001$	$p < .001$ $p = .040$	Technical Instructor/master instructor	Advanced open water
				$H(3) = 57.548, p < .001$	$p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive Wreck dived < 5 times
					$p < .001$	Occasionally wreck dive	Wreck dived < 5 times
Environmental	Seeing marine life	2	3.94	$\chi^2 = 29.143, df = 4, p < .001$	-	Females	Males
				$H(6) = 24.041, p = .001$	$p = .005$	United States	Other countries
				$H(6) = 26.064, p < .001$	$p = .038$	≤ 20 dives	501-1,000 dives
					$p = .006$ $p = .003$	21-50 dives	501-1,000 dives >1,000 dives

Table S2: Motivations to wreck dive – Statistically significant differences (cont.)

Cluster	Motivation factor	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	More important to	Less important to
Environmental (continued)	Seeing marine life (continued)	2	3.94	$H(6) = 60.256, p < .001$	$p < .001$ $p < .001$ $p < .001$ $p < .001$ $p < .001$ $p = .004$	Open water Specialty Advanced open water Master scuba diver Divemaster Instructor/master instructor	Technical
				$H(6) = 15.671, p = .016$	$p = .014$	≤ 5 years diving	11-15 years diving
				$H(3) = 36.012, p < .001$	$p < .001$	Wreck dived <5 times Rarely wreck dive Occasionally wreck dive	Frequently wreck dive
	Peace & tranquillity	4	3.78	$\chi^2 = 15.756, df = 4, p = .003$	-	Females	Males
				$H(6) = 29.832, p < .001$	$p < .001$ $p < .001$ $p = .001$	Japan	Australia United States Other countries
				$H(6) = 29.030, p < .001$	$p = .045$ $p = .008$	≤ 20 dives	501-1,000 dives >1,000 dives
					$p = .006$	21-50 dives	>1,000 dives
					$p = .042$	51-100 dives	>1,000 dives
				$H(6) = 32.540, p < .001$	$p = .036$ $p < .001$ $p = .048$	Open water Advanced open water Instructor/master instructors	Technical
				$H(6) = 30.237, p < .001$	$p = .027$ $p = .013$ $p = .012$ $p = .002$ $p = .001$	≤ 5 years diving	6-10 years diving 11-15 years diving 16-20 years diving 26-30 years diving >30 years diving
					$H(3) = 23.659, p < .001$	$p < .001$ $p = .020$ $p = .027$	Wreck dived <5 times Rarely wreck dive Occasionally wreck dive
				$p = .041$		Wreck dived <5 times	Occasionally wreck dive

Table S2: Motivations to wreck dive – Statistically significant differences (cont.)

Cluster	Motivation factor	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	More important to	Less important to
Environmental (continued)	Clear water	5	3.41	$\chi^2 = 11.231, df = 4, p = .024$	-	Females	Males
				$H(6) = 25.534, p < .001$	$p = .004$ $p = .007$ $p = .001$	Japan	Australia United States Other countries
				$H(6) = 75.252, p < .001$	$p = .021$ $p = .003$ $p < .001$	≤ 20 dives	251-500 dives 501-1,000 dives >1,000 dives
					$p = .009$ $p < .001$	51-100 dives	500-1,000 dives >1,000 dives
				$H(6) = 95.179, p < .001$	$p = .037$ $p < .001$ $p = .015$ $p = .002$	Open water	Master scuba divers Technical Divemasters Instructor/master instructors
					$p = .002$	Specialty	Technical
					$p < .001$ $p = .002$	Advanced open water	Technical Instructor/master instructors
					$p = .007$ $p < .001$ $p = .003$	Master scuba divers Divemasters Instructor/master instructors	Technical
				$H(6) = 25.370, p < .001$	$p = .002$ $p = .017$ $p = .001$	≤ 5 years diving	6-10 years diving 11-15 years diving >30 years diving
				$H(3) = 71.275, p < .001$	$p = .001$ $p < .001$	Wreck dived < 5 times	Occasionally wreck dive Frequently wreck dive
					$p = .011$ $p < .001$	Rarely wreck dive	Occasionally wreck dive Frequently wreck dive
					$p < .001$	Occasionally wreck dive	Frequently wreck dive
				Observing effects of time (decay)	7	3.34	$H(6) = 20.634, p = .002$
	$H(3) = 33.335, p < .001$	$p = .011$ $p < .001$ $p = .005$	Frequently wreck dive				Occasionally wreck dive Rarely wreck dive Wreck dived < 5 times

Table S2: Motivations to wreck dive – Statistically significant differences (cont.)

Cluster	Motivation factor	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	More important to	Less important to
Structure & technology	Complexity & size of a wreck	7	3.34	$\chi^2 = 32.487, df = 4, p < .001$	-	Males	Females
				$H(5) = 13.507, p = .019$	$p = .021$	Aged < 25 years	Aged 55-64 years
				$H(3) = 9.650, p = .022$	$p = .024$	Trade qualifications	Bachelor or higher degree
				$H(6) = 38.098, p < .001$	$p = .029$ $p < .001$	Technical	Specialty Advanced open water
				$H(3) = 55.305, p < .001$	$p = .001$ $p < .001$ $p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive Wreck dived < 5 times
	Exploring & discovering machinery & fittings	10	3.15	$\chi^2 = 50.723, df = 4, p < .001$	-	Males	Females
				$H(3) = 11.727, p = .008$	$p = .026$	Trade qualifications	Bachelor or higher degree
				$H(6) = 51.768, p < .001$	$p = .002$ $p = .007$ $p < .001$ $p = .044$	Technical	Open water Specialty Advanced open water Master scuba diver
				$H(3) = 64.314, p < .001$	$p < .001$ $p < .001$ $p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive Wreck dived < 5 times
					$p = .032$	Occasionally wreck dive	Rarely wreck dive
Technique/challenge	Wreck penetration	8	3.28	$\chi^2 = 27.988, df = 4, p < .001$	-	Males	Females
				$H(6) = 18.094, p = .006$	$p = .003$	Australia	United States
				$H(6) = 15.580, p = .016$	$p = .032$	>1,000 dives	21-50 dives
				$H(6) = 63.527, p < .001$	$p < .001$ $p = .001$ $p < .001$ $p = .022$ $p < .001$	Technical	Open water Specialty Advanced open water Master scuba divers Divemasters
					$p = .027$	Instructor/master instructors	Open water
				$H(3) = 44.609, p < .001$	$p < .001$ $p < .001$ $p < .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive Wreck dived < 5 times

Table S2: Motivations to wreck dive – Statistically significant differences (cont.)

Cluster	Motivation factor	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	More important to	Less important to
Technique/challenge (continued)	Wreck penetration (continued)	8	3.28	$H(3) = 12.528, p = .006$	$p = .047$ $p = .014$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive
	Photography	9	3.22	-	-	-	-
Treasure hunting				$\chi^2 = 9.517, df = 4, p = .049$	-	Males	Females
				$H(3) = 15.652, p = .001$	$p = .011$	Trade qualifications	Degree or higher degree
					$p = .026$	Degree or higher degree	Diploma
				$H(6) = 33.574, p < .001$	$p < .001$ $p = .003$	Technical	Advanced open water Master scuba diver
				$H(3) = 53.781, p < .001$	$p < .001$ $p < .001$ $p = .001$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive Wreck dived <5 times
		$p < .001$ $p = .001$	Occasionally wreck dive	Rarely wreck dive Wreck dived <5 times			
Collecting artefacts &/or fittings	12	1.78	$H(6) = 19.372, p = .004$	$p = .008$	United States	Other countries	
			$H(3) = 12.528, p = .006$	$p = .047$ $p = .014$	Frequently wreck dive	Occasionally wreck dive Rarely wreck dive	

This table reports the outcomes of the statistical analyses to determine differences between frequency of wreck diving, diver profile and dive experience variables (Kruskal -Wallis test or Chi square)

Table S3: Wreck diver attitudes to management controls – Statistically significant differences

Cluster	Management control	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	Higher level of agreement	Lower level of agreement
High restriction	Harsh penalties	1	4.00	$\chi^2 = 14.550, df = 4, p = .006$	-	Females	Males
				$H(6) = 65.902, p < .001$	$p < .001$	Australia	United States
					$p < .001$	Japan	United States
					$p < .001$	Other countries	United States
				$H(6) = 25.850, p < .001$	$p = .029$	Divemaster	Open water
		$p = .019$		Technical			
		$p = .033$	Instructor/master instructor	Open water			
		$p = .033$		Specialty			
		$p = .021$		Technical			
		$H(6) = 25.053, p < .001$	$p < .001$	≤ 5 years diving	>30 years diving		
		$p = .026$	6-10 years diving				
		$p = .004$	11-15 years diving				
		$p = .001$	21-25 years diving				
		$H(3) = 8.011, p = .046$	$p = .038$	Occasionally wreck dive	Frequently wreck dive		
	No visitation by divers	9	1.46	$\chi^2 = 10.069, df = 4, p = .039$	-	Females	Males
				$H(6) = 22.278, p = .001$	$p < .001$	Advanced open water	Open water
				$H(3) = 20.096, p < .001$	$p = .003$	Occasionally wreck dive	Frequently wreck dive
		$p = .001$	Rarely wreck dive				
Moderate restriction	Permits to dive some wrecks	2	3.31	$\chi^2 = 20.270, df = 4, p < .001$	-	Females	Males
				$H(5) = 16.739, p = .005$	$p = .021$	Aged 25-34 years	Aged 45-54 years
				$H(6) = 19.160, p = .004$	$p = .009$	Japan	United States
				$H(6) = 19.860, p = .003$	$p = .006$	≤ 5 years diving	>30 years diving
				$H(3) = 12.436, p = .006$	$p = .017$	Dived wrecks < 5 times	Frequently wreck dive
	Special certification	3	2.85	$H(5) = 40.605, p < .001$	$p = .001$	Aged < 25 years	Aged 45-54 years
					$p = .006$		Aged 55-64 years
					$p < .001$		Aged ≥ 65 years
					$p = .009$	Aged 25-34 years	Aged 45-54 years
					$p = .001$		Aged ≥ 65 years
	$p = .008$	Aged 35-44 years	45-54 years				
	$p < .001$		Aged ≥ 65 years				

Table S3: Wreck diver attitudes to management controls – Statistically significant differences (cont.)

Cluster	Management control	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	Higher level of agreement	Lower level of agreement	
Moderate restriction (continued)	Special certification (continued)	3	2.85	$H(6) = 39.268, p < .001$	$p = .011$ $p < .001$	Japan	Australia United States	
				$H(6) = 30.438, p < .001$	$p < .001$	Other countries	United States	
				$H(6) = 16.436, p = .012$	$p = .002$ $p < .001$	51-100 dives	>1,000 dives	
				$H(6) = 39.682, p < .001$	$p < .001$	101-250 dives	>1,000 dives	
					$p = .009$	Divemasters	Open water	
					$p = .018$ $p = .001$	≤5 years diving	26-30 years diving >30 years diving	
					$p = .004$	6-10 years diving	>30 years diving	
					$p = .013$	11-15 years diving	>30 years diving	
					-	Females	Males	
					$p = .014$	Aged 25-34 years	Aged 45-54 years	
	Some accessible wrecks off-limits to divers				$\chi^2 = 13.846, df = 4, p = .008$	-		
					$H(5) = 11.935, p = .036$	$p = .014$	Bachelor or higher degree	Trade qualifications
					$H(3) = 19.245, p = .001$	$p = .001$	Other countries	Australia
					$H(6) = 18.645, p = .005$	$p = .013$	51-100 dives	>1,000 dives
					$H(6) = 15.068, p = .020$	$p = .007$	Advanced open water	Technical
					$H(6) = 15.104, p = .019$	$p = .016$	Occasionally wreck dive	Frequently wreck dive
		$p = .036$ $p = .023$	Rarely wreck dive					
	Underwater guide	5	2.60		$\chi^2 = 16.350, df = 4, p = .003$	-	Females	Males
					$H(5) = 28.289, p < .001$	$p = .031$ $p = .043$	Aged <25 years	Aged 45-54 years Aged 55-64 years
						$p = .004$ $p = .007$	Aged 25-34 years	Aged 45-54 years Aged 55-64 years
						$p = .029$	Aged 45-54 years	Aged ≥65 years
					$p = .042$	Aged 55-64 years	Aged ≥65 years	
$H(6) = 56.072, p < .001$					$p < .001$ $p < .001$ $p < .001$	Japan	Australia United States Other countries	
					$p = .001$	Other countries	Australia	
$H(6) = 38.931, p < .001$					$p = .002$ $p = .002$	21-50 dives	501-1,000 dives >1,000 dives	
					$p = .003$ $p = .002$	51-100 dives	501-1,000 dives >1,000 dives	
					$p = .015$ $p = .012$	101-250 dives	501-1,000 dives >1,000 dives	

Table S3: Wreck diver attitudes to management controls – Statistically significant differences (cont.)

Cluster	Management control	Rank	Mean	χ^2 or H result	Adjusted p -value (pairwise comparison)	Higher level of agreement	Lower level of agreement
Moderate restriction (continued)	Underwater guide (continued)	5	2.60	$H(6) = 67.437, p < .001$	$p = .014$ $p < .001$ $p < .001$ $p < .001$ $p < .001$	Open water Advanced Master scuba divers Divemasters Instructors/master instructors	Technical
				$H(6) = 32.898, p < .001$	$p = .027$ $p = .023$ $p = .028$ $p = .003$ $p < .001$	≤ 5 years diving	6-10 years diving 11-15 years diving 21-25 years diving 26-30 years diving >30 years diving
				$H(3) = 49.418, p < .001$	$p < .001$ $p < .001$ $p < .001$	Occasionally wreck dive Rarely wreck dive Dived wrecks < 5 times	Frequently wreck dive
				$p = .004$	Dived wrecks < 5 times	Occasionally wreck dive	
Low restriction				$H(6) = 17.584, p = .007$	$p = .010$	Japan	Other countries
				$H(3) = 9.171, p = .018$	$p = .023$	Dived wrecks < 5 times	Frequently wreck dive
				$H(6) = 20.663, p = .002$ $H(6) = 20.034, p = .003$	$p = .001$ $p = .002$ $p = .048$	United States >30 years diving	Other countries 11-15 years diving 16-20 years diving
Knowledge	Moving artefacts around a wreck site is okay	8	1.60	$H(5) = 17.474, p = .004$	$p = .005$	Aged 45-54 years	Aged 34-45 years
				$H(6) = 15.700, p = .015$	$p = .046$	United States	Other countries
				$H(6) = 16.185, p = .013$	$p = .032$	>30 diving	11-15 years diving

This table reports the outcomes of the statistical analyses to determine differences between frequency of wreck diving, diver profile and dive experience variables (Kruskal -Wallis test or Chi square)