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Outdoor recreation in French Coastal and Marine Protected Areas. Exploring recreation experience preference as a way for building conservation support

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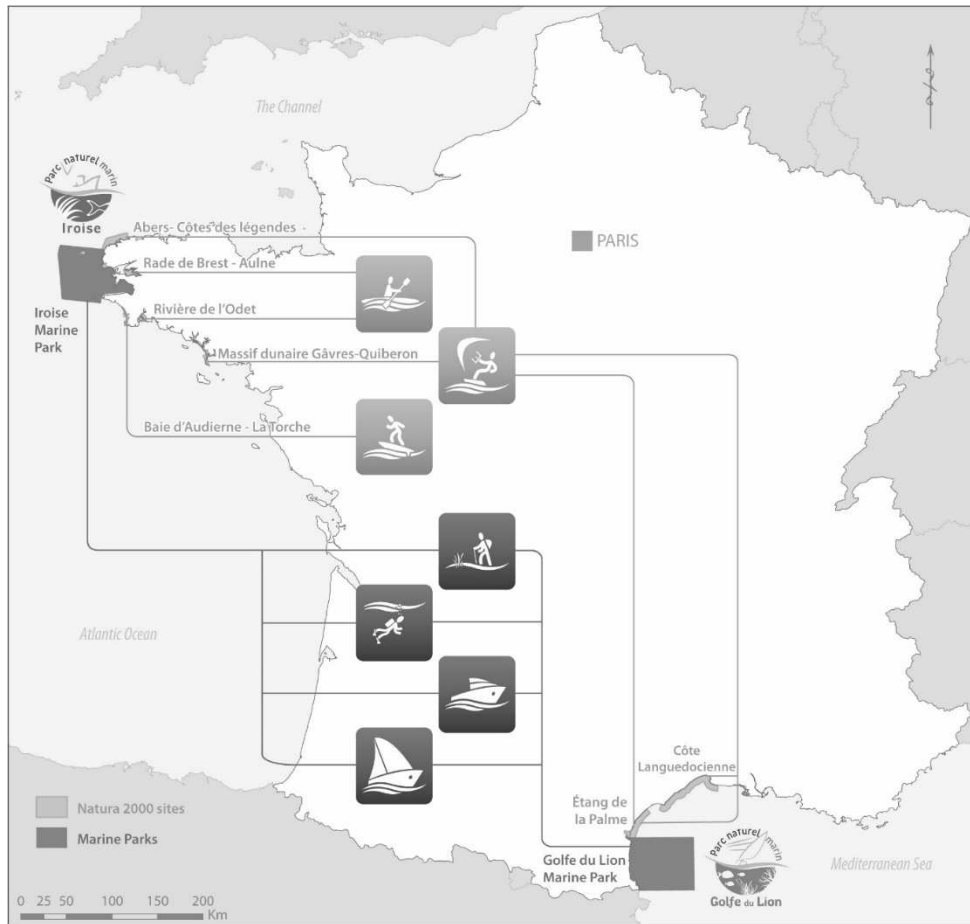


Figure 1. Map of sampled protected areas and recreation activities

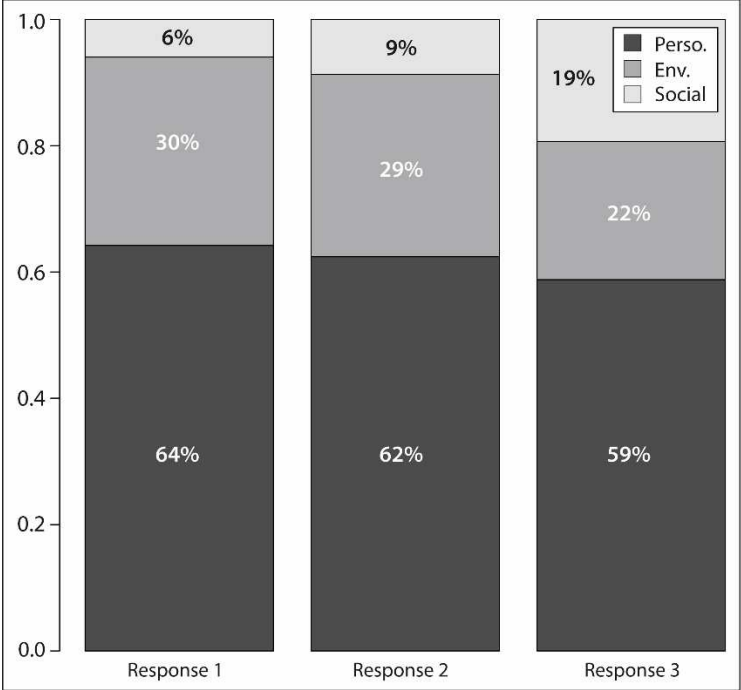


Figure 2: Description of user meta-motivations depending on the response's rank

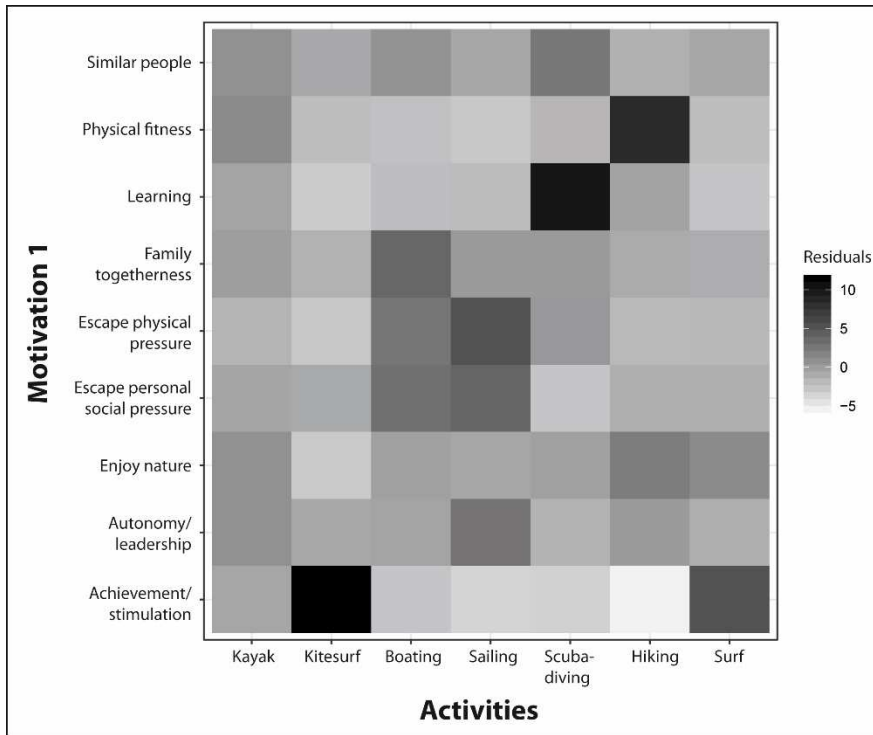


Figure 3. Map of statistical associations between the REP domains and the type of activity (Darker squares indicate stronger association, lighter squares indicate weaker associations).

Question Type	Question content	Response type	Response options
Recreation activity characteristics	Type of activity at time of survey	Multi-choice	Select one of 7 activities
	Overall length of activity practice	Multi-choice	Select one of 5 year ranges
	Length of activity practice at the site	Multi-choice	Select one of 5 year ranges
	Period of practice (time of year)	Multi-choice	Select one of 3 time frame options
	Importance of the activity to the users	Rank	Select one of 3 options 1 (high) to 3 (low)
Recreation setting	Region of activity practice	Multi-choice	Select 1 of 2 regions
	Type of physical environment	Multi-choice	Select one of 5 types
Recreation motivation	Main motivations for practicing the activity at the given site	Open	Name up to 3 motivations
Demographics	Age, gender, occupation, residential status	Multi-choice	Select one option for each question

Table 1: Questionnaire design

	Hiking n=194	Surf n=99	Scuba diving n=158	Sailing n=166	Boating n=156	Kitesurf n=149	Kayak n=78	Total Sample N=1000	Total % *
Gender:									
- Male	83	77	112	144	142	132	47	737	74
- Female	108	22	46	22	14	16	31	259	26
- No response	3	0	0	0	0	1	0	4	-
Age:									
- Under 29 years **	21	47	40	9	6	47	14	184	18,6
- 30-44 years	34	44	46	20	19	58	23	244	24.6
- 45-59 years	75	7	50	49	40	32	34	287	29.0
- 60-74 years	57	1	21	78	78	11	6	252	25.4
- More than 75 years	2	0	0	10	12	0	0	24	2.4
- No response	5	0	1	0	1	1	1	9	-
Occupation:									
- Artisans, merchants, company directors	5	10	10	12	18	14	4	73	7.4
- Higher education and the liberal professions	47	24	59	38	16	52	19	255	25.7
- Intermediate professions	34	11	17	13	5	20	15	115	11.6
- Employees	32	14	24	9	22	25	13	139	14.0
- Workers	4	4	1	2	6	3	4	24	2.4
- Retirees	57	0	13	82	82	10	9	253	25.5
- Students	10	24	19	1	1	7	5	67	6.7
- High school students	0	5	12	1	1	3	6	28	2.8
- Others ***	4	6	3	1	3	12	2	39	3.9
- No response	1	1	0	1	0	3	1	7	-
Residential status:									
- Locals	50	59	51	125	119	100	44	548	55.2
- Tourists	127	34	11	10	7	38	31	339	34.2
- Secondary residents	17	6	92	31	30	8	2	105	10.6
- Non-response	0	0	4	0	0	3	1	8	-
Region of practice:									
- Brittany	101	99	77	80	82	69	78	586	58,6
- Mediterranean	93	0	81	86	74	80	0	414	41,4

*The total (%) was calculated without the “no response” numbers.

** Due to a low number of observations, the youngest age category (less than 15 years) was merge with the 15-29 category

*** Due to a low number of observations, the farmer’s occupation was merged with the category “Others”.

Table 2: Demographic characteristics of the sample included in the analysis.

Motivation domains	Mean (sd)	Size	Freq. per REP domain	Meta-classes	Freq. per meta-class
Enjoy nature	0.63 (0.67)	628	27.34%	Environmental motivations	27,3 %
Escape personal-social-pressures	0.40 (0.59)	399	17.37%	Personal motivations	62,1%
Achievement/stimulation	0.33 (0.58)	328	14.28%		
Physical fitness	0.27 (0.50)	267	11.62%		
Learning	0.21 (0.44)	205	8.92%		
Escape physical pressure	0.14 (0.37)	136	5.92%		
Autonomy/leadership	0.05 (0.21)	47	2.05%		
Creativity	0.02 (0.14)	19	0.83%		
Introspection	0.01 (0.09)	9	0.39%		
Physical rest	0.01 (0.08)	7	0.30%		
Nostalgia	0.01 (0.07)	5	0.22%		
Risk reduction	0.00 (0.05)	3	0.13%		
Equipment	0.00 (0.04)	2	0.09%		
Risk taking	0.00 (0.04)	2	0.09%		
Social security	0.00 (0.00)	0	0%		
Similar people	0.17 (0.39)	167	7.27%	Social motivations	10,6%
Family togetherness	0.04 (0.19)	35	1.52%		
Teaching-leading others	0.03 (0.18)	27	1.18%		
New people	0.01 (0.10)	11	0.48%		

Table 3: General description of user REP motivations

		REP motivations (9 classes) (*)	
		Chi-square χ^2 (df)	P-value
Demographics	Sex	28.1 (8)	0.0005
	Age	115.7 (32)	< 0.0001
	Occupation	127.4 (72)	< 0.0001
	Residential status	77.8 (16)	< 0.0001
Characteristics of activities	Types of activities	593.5 (48)	< 0.0001
	Overall length of practice (in years)	68.1 (32)	0.0002
	Length of practice at the studied site (in years)	68.8 (32)	0.0002
	Period of practice within a year	35.8 (16)	0.003
	Importance of the studied activity for the users	17.0 (16)	0.3840
Geographical and physical settings	Region (Brittany vs Mediterranean)	11.2 (8)	0.188
	Types of environment	459.7 (24)	< 0.0001

(*) All the χ^2 tests are only based on the first response-motivation given by respondents.

Table 4: Statistical association results from crossing recreation variables and two dimensions of the recreational motivations.

Segment #1 (n=101, 13%)	V-test	Mean (sd) in category	Overall Mean (sd)	p.value
Escape physical pressure	26.84	1.08 (0.30)	0.14 (0.38)	1.20e-158
<i>Physical fitness</i>	<i>-2.09</i>	<i>0.14 (0.35)</i>	<i>0.23 (0.46)</i>	<i>3.64e-02</i>
<i>Similar people</i>	<i>-2.32</i>	<i>0.09 (0.28)</i>	<i>0.18 (0.40)</i>	<i>2.03e-02</i>
<i>Enjoy nature</i>	<i>-2.49</i>	<i>0.47 (0.61)</i>	<i>0.62 (0.67)</i>	<i>1.27e-02</i>
<i>Learning</i>	<i>-2.50</i>	<i>0.11 (0.31)</i>	<i>0.21 (0.43)</i>	<i>1.26e-02</i>
<i>Achievement/Stimulation</i>	<i>-4.20</i>	<i>0.11 (0.31)</i>	<i>0.34 (0.59)</i>	<i>2.71e-05</i>
Segment #2 (n=437, 56%)	V-test	Mean (sd) in category	Overall Mean (sd)	p.value
Achievement/Stimulation	6.16	0.46 (0.66)	0.34 (0.59)	7.27e-10
Escape persosocial presssure	4.31	0.48 (0.63)	0.4 (0.59)	1.64e-05
Enjoy nature	3.65	0.7 (0.7)	0.62 (0.67)	2.62e-04
<i>Escape physical pressure</i>	<i>-11.51</i>	<i>0.00 (0.00)</i>	<i>0.14 (0.38)</i>	<i>1.23e-30</i>
<i>Similar people</i>	<i>-13.74</i>	<i>0.00 (0.00)</i>	<i>0.18 (0.40)</i>	<i>5.90e-43</i>
<i>Learning</i>	<i>-15.12</i>	<i>0.00 (0.00)</i>	<i>0.21 (0.43)</i>	<i>1.11e-51</i>
Segment #3 (n=124, 16%)	V-test	Mean (sd) in category	Overall Mean (sd)	p.value
Similar people	26.23	1.04 (0.23)	0.18 (0.4)	1.18e-151
Physical fitness	2.03	0.31 (0.51)	0.23 (0.46)	4.19e-02
<i>Enjoy nature</i>	<i>-3.06</i>	<i>0.45 (0.54)</i>	<i>0.62 (0.67)</i>	<i>2.24e-03</i>
<i>Escape physical pressure</i>	<i>-4.45</i>	<i>0.00 (0.00)</i>	<i>0.14 (0.38)</i>	<i>8.46e-06</i>
Segment #4 (n=125, 16%)	V-test	Mean (sd) in category	Overall Mean (sd)	p.value
Learning	24.19	1.07 (0.26)	0.21 (0.43)	2.68e-129
Achievement/Stimulation	-3.53	0.17 (0.39)	0.34 (0.59)	4.10e-04
Escape persosocial presssure	-3.76	0.22 (0.47)	0.40 (0.59)	1.70e-04
<i>Escape physical pressure</i>	<i>-4.47</i>	<i>0.00 (0.00)</i>	<i>0.14 (0.38)</i>	<i>7.66e-06</i>
<i>Similar people</i>	<i>-5.34</i>	<i>0.00 (0.00)</i>	<i>0.18 (0.40)</i>	<i>9.14e-08</i>

Table 5: Segmentation based on recreationist's motivations (negative v-test values are in italics).

Segment #1: “Solitaries”	V-test	% of ind. into the segment	% of ind. into the sample	p.value
Sailing	4.55	35.64	18.04	5.40e-06
Age = 60-74 years	3.90	42.57	25.92	9.53e-05
Retirees	3.74	41.58	25.67	1.81e-04
Length of practice = 31 years or more	2.26	30.69	21.73	2.40e-02
Boating	2.04	25.74	18.17	4.18e-02
Length of practice = 21-30 years	1.97	18.81	12.45	4.84e-02
Profession = Higher education and the liberal prof.	-2.11	17.82	26.30	3.45e-02
Surfing	-2.24	3.96	9.78	2.52e-02
Age = 15-29 years	-2.37	9.90	18.04	1.77e-02
Length of practice = less than 5 years	-2.70	14.85	25.41	6.91e-03
Kite-surfing	-4.29	2.97	15.76	1.81e-05
Segment #2: “Anti-stress performers”	V-test	% of ind. into the segment	% of ind. into the sample	p.value
Kite-surfing	6.77	23.34	15.76	1.31e-11
Boating	2.72	21.51	18.17	6.44e-03
Importance of the studied activity for the users = Rank3 and more	2.58	36.38	32.53	9.86e-03
Surfing	2.24	11.90	9.78	2.52e-02
Kayak	-2.09	6.64	8.51	3.70e-02
Length of practice = 21-30 years	-2.46	9.84	12.45	1.39e-02
Tourists	-2.69	26.77	30.75	7.16e-03
Importance of the studied activity for the users = Rang1	-3.00	40.96	45.74	2.68e-03
Scuba-diving	-9.00	6.64	17.41	2.32e-19
Segment #3: “Socialisers”	V-test	% of ind. into the segment	% of ind. into the sample	p.value
Region = Brittany	4.61	80.65	62.90	4.07e-06
Scuba-diving	3.28	28.23	17.41	1.04e-03
Importance of the studied activity for the users = Rang1	2.98	58.06	45.74	2.86e-03
Surfing	2.72	16.94	9.78	6.46e-03
Students	2.50	11.29	5.97	1.25e-02
Kayak	2.44	14.52	8.51	1.48e-02
Age = 30-44 years	-1.97	18.55	25.54	4.85e-02
Workers	-2.01	0	2.29	4.40e-02
Boating	-2.23	11.29	18.17	2.58e-02
Kite-surfing	-2.38	8.87	15.76	1.72e-02
Sailing	-2.76	9.68	18.04	5.80e-03
Residential status = Secondary resident	-2.85	4.03	10.80	4.41e-03
Importance of the studied activity for the users = Rank3 and more	-3.74	18.55	32.53	1.85e-04
Mediterranean	-4.61	19.35	37.10	4.07e-06
Segment #4: “Explorers”	V-test	% of ind. into the segment	% of ind. into the sample	p.value
Scuba-diving	9.27	49.60	17.41	1.93e-20
Tourists	4.01	46.40	30.75	6.14e-05

Length of practice on the studied site = Less than 5 years	3.38	57.60	43.71	7.12e-04
Mediterranean	2.90	48.80	37.10	3.68e-03
Workers	2.36	5.60	2.29	1.84e-02
Length of practice = Less than 5 years	2.24	33.60	25.41	2.54e-02
Length of practice on the studied site = + 30 years	-2.09	4.80	9.66	3.64e-02
Length of practice = 31 years and more	-2.22	14.40	21.73	2.66e-02
Sailing	-2.23	11.20	18.04	2.55e-02
Length of practice on the studied site = 11-20 years	-2.62	10.40	18.42	8.68e-03
Brittany	-2.90	51.20	62.90	3.68e-03
Locals	-3.34	44.80	58.45	8.43e-04
Kite-surfing	-3.36	6.40	15.76	7.88e-04
Boating	-3.73	7.20	18.17	1.94e-04
Surfing	-4.94	0	9.78	7.72e-07

Table 6: Segments description by illustrative variables (negative v-test values are in italic).