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Utilitarianism and Weak Sustainability: A Corpus Analysis of the Representation of the Sea by the UK Government (2010-2023)

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ABSTRACT: This article explores how the sea is represented in the UK government's communications by applying corpus linguistic analysis to textual data. The findings reveal a dominant discourse that frames the sea primarily as an economic asset, emphasizing investment and sustainable exploitation understood as resource preservation. Emotional and social dimensions of sustainability are noticeably underrepresented, while narratives surrounding the sea are shaped by managerial, territorial, and threat-based framings. This utilitarian portrayal hinders the development of ocean citizenship, which requires a deeper, emotional connection with the sea. By identifying these narrative imbalances, the article contributes to scholarly discussions on 'sea blindness' and ocean citizenship by showing how such a discourse may obscure the sea's social and environmental significance, limiting public engagement and stewardship. The article argues for a rebalancing of these narratives to include more emotionally resonant and hopeful communication strategies that highlight the intrinsic value of the marine environment beyond its economic value. Key recommendations include shifting from technical to affective language, promoting positive imagery of ocean protection, and favouring the term 'ocean' over 'sea' to evoke a global sense of stewardship and belonging.

KEYWORDS: Ocean; Representation; Communication; Sustainability; Utilitarianism; Corpus linguistics

1. Introduction

The sea is key to prosperity because sea lanes of communication are the arteries of the global economy (about 90% of trade by volume passes through the sea). At the same time, the sea provides valuable resources from fish (that represents about 25% of the global protein intake) to oil, gas and rare ores. Yet, the effects of climate change on marine ecosystems, overexploitation of fish stocks and pollution originating on land put immense pressure on the marine environment at a time when the ocean-climate nexus is key to address the effects of climate change (Ferse, 2023; Authors, 2024; Mishra, 2025).

At the same time, 'sea blindness', that is a lack of interest and awareness of the importance of the sea for societies, cultures and identities, is still dominant in Britain (Authors, 2023) and the sea is at the bottom of the list when it comes to public perception of global environmental issues (Potts et al., 2016). Despite its crucial role for humanity, in collective Western imaginaries, the sea is recurrently represented as a placeless, uninhabitable void (Steinberg, 2001). Ocean space epitomises emptiness, danger and 'otherness' (Authors, 2016). Such representations contribute to making the sea 'invisible' or at least irrelevant to most people based on land, although they benefit from the services the ocean provides, whether ecosystem services, cultural services or provisioning. In turn, this translates into a lack of awareness of, and interest in, ocean matters whether from a political or environmental perspective, as well as the marginalisation of some categories of actors (Ertör, 2021; Chuenpagdee and Jentoft, 2018).

This translates into a lack of ocean citizenship that "describes the rights and responsibilities of an individual towards the marine environment, which support the achievement of marine policy objectives at the national level" (McKinley and Fletcher, 2012, p.839). Yet ocean sustainability is contingent to citizens' awareness of "the benefits they receive from the marine environment" (DEFRA, 2021, p.4; see also Kelly et al, 2021; Buchan et al, 2023).

Despite the recent "turn to citizens" (McKinley et al, 2023) and the ever growing recognition of the centrality of social sciences to explore the interconnection between ocean sustainability, societies and power structures (e.g., Bennet, 2019; McKinley et al, 2022; Ban et al, 2019; Penca et al, 2025), previous research has shown that the dominant narrative on the sea is one of utilitarianism and opportunism: the sea must be protected because it is economically useful (resources, profit, job creation), and not so much because there is any sense of belonging and emotional connection to the sea (Authors, 2022). This utilitarian representation of the sea has been evidenced by studies of media representations (Authors 2023; Winder, 2024). In this article, we concentrate on public representation by analysing HM Government's textual production (policy documents, press releases, communications, etc.) to get an understanding of the way the sea is represented by governmental actors and how this can impact on citizens' perception of the sea and HMG's policies (e.g., marine resources protection, blue economy, etc.), and, ultimately, on ocean sustainability. Using methods in corpus linguistics that make it possible to analysis very large textual datasets both quantitatively and qualitatively, this article answers to the following research questions: How are the sea and maritime activities represented in HMG's recent textual productions (2010-2023)? Does it corroborate previous findings and studies on the representation of the sea? How can our findings inform future communication strategies to improve ocean citizenship?

2. Data

We wanted to retrieve every time the sea or marine environment is mentioned on the government website (gov.uk). To do this, we used Python (language programming software) and the APIs (search functionalities) directly provided by gov.uk to collect every webpage that comes up when we make a search with one of our key terms (see Table 1). The key terms we used for this process were 'sea', 'marine', 'maritime', 'ocean' and 'navy'.

Key Term	Number of Webpages
Sea	12,249
Marine	8,345
Maritime	5,281
Navy	4,405
Ocean	2,434
Total	**32,714**

Table 1: Number of Webpages per key search term

Figure 1 shows the process of corpus creation: 9,952 of the 32,714 pages we identified were duplicate webpages and so were removed. We also decided to remove 2,201 pages which were categorised under the 'services' and 'transparency and freedom of information releases' search groups, because 'services' pages are intended as procedural information and 'freedom of information releases' are ex-post information and less public facing. An additional subset of pages (272) were rejected as they did not contain additional relevant content. This includes pages which are not in English, pages which only redirect to other pages, content pages and one link to an external website. The final pages (20,289)

were then split by time period to facilitate the comparative analysis (in particular to allow analyses of the evolution of the narrative), creating two separate datasets, or 'corpora'. One dataset for 2010-2017, consists of 8,386 pages, and one for 2018-2023, consists of 11,270 pages. We created two datasets to allow convenient test procedure and comparison between recent (past five years) and older content; the split was not based on pre-identified changes in policy or discourse. 633 pages were published in 2009 or earlier and were excluded. Figure 2 shows the number of times the initial key search terms appeared in the final corpora.

3. Method

To analyse these corpora, we used analytical techniques associated with the field of corpus linguistics (the computer-aided analysis of large language data sets, known as 'corpora'), which enable systematic analyses of large amounts of text using software packages to find patterns of representation. Corpus linguistic methods make it possible to analyse the data both quantitatively (for example, by using tailor-made software tools to identify the words that tend to occur around 'sea') and qualitatively (by looking at the use of selected instances of 'sea' in context).

To provide an overview of the most distinctive linguistic characteristics of the corpora, we carried out 'keyword' analyses. Keywords are words that are more frequent in a corpus of interest than they are in another corpus, where the difference is statistically significant. They can be interpreted as reflecting the most distinctive concepts and themes in a particular corpus. Keywords were interpreted by examining their 'collocations'. Collocation analyses explore co-occurrence relationships between words and therefore makes it possible to study the narratives or discourses that a word is part of.

The #LancsBox 6.0 software (Brezina et al., 2021) was used for collocation and concordance analyses. A collocation analysis enables us to take a term and examine the words which frequently co-occur with it. To prevent this being an uninteresting list, skewed by the most frequent words such as 'the' and 'a', statistical measures are used. In this analysis, the measure of 'Log Dice' was used, as it usefully shows collocates which occur more 'exclusively' with our search term but without as much of a low frequency bias as some other measures. This measure uses the harmonic mean of the proportions of how often the two words co-occur, relative to their frequency in the corpus (Gablasova et al., 2017). The higher the measure, the stronger the connection between two words. #Lancsbox 6.0 enables graphic visualisation of collocates that grant them a "psychological reality" (Durrant & Doherty, 2010). When graphically represented, the strength is shown by the closeness to the search term on the collocation graphs. The term frequency is shown by how dark the dot is. The 'span' determines that the software looks at five words to the left and five to the right of the search term, which is the default of Lancsbox 6.0 , and is commonly used in applied linguistics studies (McEnery & Hardie, 2012, p. 129). These collocations are then used to guide a closer, qualitative analysis of the corpus, via a 'concordance analysis', where we look at the linguistic context the term occurs in.

The corpora were tagged for part of speech, which enables us to differentiate when a word is used as a proper noun (e.g., 'North Sea_NNP'), a common noun (e.g., "by the sea_NN"), or an adjective (e.g., 'marine_JJ environment'). This enhances the analysis and is particularly important within the context of HMG website, as there is a high frequency of organisations, locations, and names that we would expect from a business-like genre. It also allows us to look, for example, specifically at the adjectives used with a term. This tagging was done by #LancsBox 6.0, which uses 'TreeTagger', a highly accurate tagger which has shown over 95% accuracy (Schmid 1995). Wmatrix 6 (Rayson, 2009) was also used in a limited way to tag the words with semantic categories (semantic tagging), such as emotion, to locate how frequent such words were in the corpus and help identify terms for analysis.

#LancsBox X (Brezina & Platt, 2023) was used when comparing the two corpora (2010-2017 and 2018-2023) to identify which terms are more prominent in one dataset when compared to another, helping to highlight some key differences. The 'simple maths' technique, proposed by Kilgarriff (2009), was used to calculate these keywords, which takes the relative frequency of each term in the corpus – per million words by default – adds 100 to it to offset terms with very low frequency, and produces the ratio of adjusted relative frequency between the corpora.

4. Findings

This section presents our findings in regard to the representation of the sea by HM Government. The first four categories account for the most recent discourse (2018-2023 corpus) and the last section exposes the evolution compared to the previous period (2010-2017).

4.1. Economic discourse

In the recent corpus (2018-2023), there has been a prominent discourse around fish and fishing, with top collocates of 'sea' as a common noun (Figure 3) including 'trout', 'salmon' and 'fishery'. A concordance analysis then reveals a close link to the collocates 'monthly', 'statistics', reflecting the quantification of fish stocks and the need to protect 'stocks' found in many examples:

> "Jon Shelley, Environment Agency Senior Fisheries Specialist, said: 'The decline in the numbers of both **salmon** and **sea trout** is of great concern'" (2022-05-17)

> "The proposed new regulations are designed to protect **salmon** and **sea trout** stocks in the River Severn as well as those stocks on the River Usk and Wye…" (2021-03-08)

The term 'stock(s)' was a strong collocate with salmon and sea trout, further showing how these fish are construed as a resource to be farmed. We see a similar focus on resources when we look at when sea is used as a proper noun (Figure 4). 'North' is the strongest collocate here by far, relating to the 'North Sea'. Collocates of the 'North Sea' include 'cod', 'haddock', 'oil', 'gas', 'deal' and 'stocks', which again highlight a focus of the sea as a provider of resources.

Looking at the collocates for 'marine' and 'maritime', we also see an embedded economic and managerial discourse. We see frequent close collocates of 'licence', 'licensing', 'management' and 'organisation' for 'marine' (Figure 6); and 'industry', 'shipping', 'transport', 'labour' and 'organization' for 'maritime' (Figure 5). This hints to a managerial discourse and shows that the questions of movement and control of resources is prominent.

The collocates of 'land', 'air', 'rail', and 'passenger' highlight another particularly prominent economic discourse surrounding the 'sea', that of transport. We often see phrases bundling the sea with other geographical terms and transport domains such as 'land, air and sea':

> "Relief is available for road, rail, air, sea and inland waterways transport" (2023-03-10)

A look at 'sea', when used as a proper noun, also reveals this transportation narrative through the collocates of 'traffic' and 'seafarers'. It can be revealing to look at the conjunctions and prepositions used with a search term, as this can show what the term is said to interact with, and where it is located. This is shown in Figure 7, looking at 'sea' as a common noun. We see a reflection of this transportation discourse, with 'between', 'across', 'over', 'around', 'by sea'. The strongest collocate was 'at'. A closer look found that this frequently referred to 'at sea', in particular 'life at sea'. Collocations for 'at sea' shown in Figure 8 include 'seafarers', 'yacht' and 'powerboat' and frequent discussion about 'life at

sea', and 'solas' (Safety of Life at Sea). This again shows the transportation narrative, but also there is clearly some concern for life at sea, with 'safety', 'wellbeing', 'armed', 'robbery' all being collocates here. This fits with the argument that maritime economic activities are dependent on a safe and secure environment in order to assure business continuity and investment (Authors, 2023). But the expression 'life at sea' refers to people and not to 'sea life' such as fish stock. This contradicts the understanding that protecting sea life and ecosystems is instrumental in sustaining long-term exploitation of marine resources (as discussed below in regard to weak sustainability).

In comparison, 'in' was a much weaker but equally as frequent collocate, at nearly 1000. However, a close concordance analysis of a random sample of 100 uses of 'in' as a collocate (shown in Table 2) found this still reflected the dominant economic discourse. Mentions of common fish such as 'salmon' and 'trout' formed the largest category, with natural resources also frequent within this random sample. It was often used in a transport context, in conjunction with, 'at sea, in the air', or placed the sea in a certain location, 'sea in Scotland', 'across land, air and sea in Estonia'. Environmental issues were also prominent with 'Rise in sea level', 'Flood', 'Pollution' and 'Plastic) as well as terms referring to military operations and dangers. The 'danger' category included phrases such as 'in an emergency at sea or at the coast dial 999', as well as 3 instances when swimming was framed as dangerous, such as 'take great care when swimming in the sea'.

Context	No. Instances	Example
(common, market) Fish	17	"number of salmon and sea trout stocks in the River Tyne"
'Rise in sea level' / flood	17	"provoke a temporary rise in sea level"
Transport	12	"autonomous vehicles on land, sea and in the air"
Location	10	"to Norway within the Arctic Circle, across land, sea and air. In Estonia.."
Danger	7	"in an emergency at sea"
Military ships / personnel	7	"JEF exercises and activities on sea, on land and in the air"
Oil/Gas/Energy	6	"gas within Great Britain and its territorial sea in the Crown"
Pollution/Plastic	6	"plastic in the sea is set to treble"
Other	18	" 'In' the sea includes a location within any relevant body…"

Table 2: Results of a close concordance analysis of where 'in' occurs with 'sea' as a common noun in 2018-2023

In sum, from an economic discourse perspective, the two most frequent representations are around 'sea as a source of fish' and 'sea as a means for transportation'.

4.2. Discourse of threat and danger

Matching the discussion of fish, analysis of 'in' revealed frequent discussion of the rising sea level. This is further reflected in Figure 3 (above), as 'rise' and 'level' are two of the strongest collocates for sea. We also saw the concern for life at sea. To investigate this further, we looked at the top verbs which collocate with 'sea'. Verbs can help to illustrate what something is doing, and what is done to something. These collocates are shown in Figure 9 (note the 'L' and 'R' next to them indicate whether they mostly occur after 'sea', or before 'sea'). Collocates such as 'operate', 'go', 'fish', 'produce', 'report' and 'manage' all corroborate the prominent economic discourse. But we see 'rise' is indeed the

strongest collocate. We also see 'flood', 'save', 'lose' and 'adapt', all of which appear to contribute to a discourse which frames the sea as a threat as a result of climate change-induced sea level rise:

> "keep the community safe from **flooding** from storms and **rising sea levels**" (22-03-2019)

> "what needs to be done to manage flood risk and **adapt** to **rising sea levels** in Barnes and Kew" (19-04-2023)

Crucially, the discourse of threat is about the rising sea levels threatening life, rather than the sea itself being threatened. There is a discourse that emphasizes the threat of sea level rise, but this is not leading to a discourse about the need to protect the sea.

The collocate 'protect' may suggest that there is at some level, a discourse about protecting the sea. However, protection concerning the sea is only a minority, 8 out of 86 uses of 'protect'. Instead, there is more attention on protecting sea trout, sea levels, sea defence, life at sea. This instead highlights that economic concerns around fish stocks, and the dangers of rising sea level rise, dominate the discourse, which corroborates finding around the economic discourse.

There is also a discourse of danger. As shown in the previous section, 'life at sea' is depicted to be dangerous, and this is also found in the collocates here of 'save' and 'lose'. The close concordance analysis of 'in' also saw 'danger' as one of its main categories. Similarly, in Figure 5, the top collocates of 'maritime' include the very frequent 'coastguard', as well as 'safety' and 'security'. This shows that there is a clear depiction of the sea as dangerous that fits with previous research findings (Authors, 2023). The sea is framed as a threat to people, rather than people being framed as a threat to the sea. And the maritime economy is constructed as dependent on a safe and secure environment.

4.3. Territorialization discourse

The narrative emphasises the notion of sovereignty and jurisdictions. Despite the fluid, liquid nature of the sea, many descriptions of the sea located it in a certain area or owned by a certain nation. Top collocates of 'sea' as a common noun showed the adjectives "international", "territorial" and "domestic" (see Figure 3 above). The close concordance analysis of 'in' also had 'location' as a top category, as the term 'sea', even as a common noun, is used to talk about seas close to certain countries, and less so the sea as a whole entity. And this is even excluding the thousands of times the sea is used as part of a name such as the 'Black Sea', 'Baltic Sea' and 'North Sea', which reinforces this territorial discourse around the term 'sea'.

> "Domestic sea passenger numbers decreased by 2% to 42.0 million" (11-11-2020)

> "waters within 0 and 6 nautical miles of the territorial sea adjacent to Northern Ireland" (22-06-2023)

Similarly, 'waters' as a plural common noun shows a highly territorial discourse, and occurs relatively frequently in the 2018-2023 corpus, at 2052 times, whereas 'seas' only occurs 584 times. The collocates of 'waters' (Figure 10) include "territorial", "English", "uk", "external", "internal" and "offshore", such as in the travel advice to Somalia: "high threat of maritime crime in the territorial waters and international waters off Somalia"(22-06-2023).

This again reflects the dominant way that the sea is spoken about in terms of certain areas, with concerns about laws or the maritime situation in certain 'waters'. This fits with the current 'territorialization' practice by states that extent their control over increasingly large portions of the sea, whether EEZ, continental shelve, MPAs and other zones, transforming the ocean into a grid, subject to sovereignty or jurisdiction much beyond territorial waters (author, 2022).

This discourse is even more pervasive in discussions of 'marine', which has frequent collocates "area", "zone" and "south" (see Figure 6 above). Figure 11 further displays that "south", "west" and "east" are all collocates for marine when used as a proper noun, showing how marine "environments" are "organised", "planned" and located in a certain area. The collocate 'conservation' was used to describe 'marine conservation zones' more than any other use, as shown in Table 3. That 'committees' was the second largest category brings up an underlying, quite entrenched bureaucratic discourse. Indeed, although the term 'committee' might imply *ad hoc* administration, their structure, membership, functioning, and operating procedures are firmly rooted in established, technical protocols. It should be considered that these findings may reflect the government website as a whole, and the high frequency of organisation names. However, it is noteworthy that these categories are quite so dominant.

This territorial and managerial discourse is also shown by the way 'marine' is predominantly used in the noun phrase "marine environment" and less frequently as "marine life", "marine species" and 'marine biodiversity'. The 'marine environment' is discursively constructed as an area, and embedded within a bureaucratic, technical discourse of spatial planning, governance, management and organisation. This technicality of the discourse reflects previous findings (Authors, 2023).

Category	Number	Most Frequent Terms
Zoning	517	Zone (227), zones (128), areas (69), area (58)
Committees	341	Committee (69), authority (54), trust (45), authorities (41), society (37),
Of	168	Of (168)
And	159	And (159)
Prepositions	80	In (35), or (18), within (14), at (13)
Other	160	Reference (12), status (11), science (10), natural (9)

Table 3: Categorisation of all words occurring to the right of 'conservation' 5 times or more (accounting for 1696 of 2046 uses) in the 2018-2023 corpus

It is worth highlighting how this discourse is intertwined with both the economic, and the threat discourse. We see 'fishing', 'vessel' and 'operate' in the top collocates of 'waters', and 'protect' and 'access' as strong collocates for 'marine' (in Figure 6 and Figure 11 respectively), reflecting how these construed areas must be protected, transportation and resource access managed, or economically operated in. When constructed as areas, it is more readily able to be controlled, managed, and embedded in this economic discourse. As mentioned above, the narrative stresses that economic objectives (profit) cannot be achieved without security and stability, hence the need for enhanced ocean governance and control of the sea (including flows of goods and people). This is sometimes even presented as a societal opportunity:

> "There are exciting opportunities for people with experience and a passion for their inshore marine area to play a major part in shaping how their local area is managed." (02-12-2020)

4.4. Weak sustainability discourse

Where issues around sustainability are mentioned, this is often related to concerns and threats. As previously discussed, 'rising sea levels' is frequently discussed in relation to sea, with no real mention of sea life beyond market fish and territorial areas. Besides this, a discourse around sustainability seems mostly absent. Still, sea level rise, environmental degradations and ecological concerns are present in the discourse: Figure 12 shows the collocations of 'ocean' as a common noun. The collocates 'plastic',

'pollution', and 'acidification' highlight a discourse which prominently discusses these ecological concerns.

Yet, the top collocates of 'maritime' mostly lack sustainability concerns (see Figure 5 above). There is one exception: 'clean' appears as the 23rd strongest collocate. A further concordance analysis of 'clean' with 'maritime' reveals that of 96 instances, 45 are relating to 'technology' (26), 'solutions' (8) or competition (11), 28 to the 'plan' (23) or sector (5). This reflects how sustainability in this context is referred to in abstract and technocratic terms like 'clean maritime technology', and 'clean maritime plan', and less with what this means, or why it is important. This generic, technical, managerial discourse is reflected in examples such as this:

> "The **clean maritime plan** is the environment route map of Maritime 2050, and will also act as the UK's national action **plan on shipping emissions**" (11-07-2019)

We found a high frequency of 'conservation' (2046) and 'sustainable' (2448), both of which, however, are used in a highly economic discourse. Words which may reflect a positive narrative are a much lower frequency, such as 'biodiversity' (1460), and 'ecosystem' (287).

'Green' is a positive sustainability term occurring 2307 times. The top 5 collocates for 'green' are 'revolution', 'finance', 'jobs', 'industrial' and 'spaces' reflecting the dominance of the themes presented above. Turning to the collocates of 'blue' that, at 893 occurrences compared to the 2307 'green' occurrences, is comparatively minor in the discourse, we note collocations with 'ocean', 'planet', and 'algae'. There are also collocates of 'economy', 'programme' and 'fund' showing the economic concerns with the discourse of the 'blue economy'.

Further, it is interesting to note that 29% of instances of 'green' are as a proper noun (677), as opposed to 65% of instances of 'blue' as a proper noun (585), reflecting the reference to the "Blue Economy" as a plan or programme, Yet, at 893 occurrences compared to the 2307 'green' occurrences, 'blue' is comparatively minor in the discourse. This is notable as this corpus focuses on discussion around the sea, and so if these terms were equally used, we may expect the opposite levels of frequency. This may suggest that it has not got the foothold or widespread environmental connotations that 'green' does.

There are some sustainability positives in discourse around 'marine' (see Figure 6 and Figure 11 above), such as the strong collocates of 'protection', 'protect', and 'conservation'. There is also a subset of uses which describe protection of marine 'life', 'biodiversity', 'species', 'ecosystems', and 'wildlife'. However, it is worth noting the implications of 'conservation' explored in the previous section, where marine conservation is closely tied to economic concerns, and territorialization. Similarly, 'protect' is more often used to describe 'marine protected areas' or the 'marine environment'. Concordance analysis of 'sustainable' as a collocate of marine shows that it also appears to be used in a bureaucratic, or economic sense:

> "The Blue Belt Programme supports the UK Overseas Territories with the protection and **sustainable management** of their **marine environments**." (19-06-2023)

> "The Commonwealth Marine Economies (CME) programme aims to **support sustainable marine economies** that: - **create jobs** - drive national economic growth - reduce poverty …" (06-02-2023)

This highlights how the sustainability narrative, where it exists, is so deeply entrenched within the bureaucratic and territorialisation discourses that genuine positive representations are backgrounded.

4.5. Ocean-positive

'Ocean' breaks some of the above trends in some way. Although it is the least frequent term from our search list, the way the 'ocean' is discussed reveals the term as a potential driver for sustainable and emotive connotations. As shown in Figure 12 (above), top collocates of ocean as a common noun include 'world's' and 'global'. This is a notable difference to the territorialisation that has been identified with discourse around the 'sea' as well as around 'marine'.

> "A new **global alliance** to help drive urgent action to **safeguard the world's** ocean and protect its precious wildlife" (2019-09-24)
>
> "Every year more than 12 million tonnes of plastic enter the **world's ocean** from land, rivers and marine activities" (2023-03-02)

We also see the notion of 'protection', 'protect' and 'safeguard'. But, in this context, these terms are used to describe protection of the 'world's ocean', 'the ocean', 'our ocean' and 'the global ocean'. This is in contrast to 'sea' – where 'protect' is used for sea resources and protection from rising sea levels, and 'marine' – for which the majority describe 'protected areas'. Interestingly, 'governance', although not a frequent term, is a collocate for 'ocean' as a common noun in the 2018-2023 corpus, with there being 'national ocean governance', 'regional ocean governance' and 'foundations of good ocean governance' which can be 'strengthened'. This exemplifies how 'ocean' is, similar to 'sea', taken up into a territorial/bureaucratic discourse, but in a way which territorializes the governance process, as opposed to the sea itself.

It should also be noted that the concerns which collocated with the ocean ('plastic', 'pollution', 'acidification'), frame the ocean as a victim, reinforcing this protection discourse. This is in contrast to the sea, which is framed as a threat through the phrase 'rising sea levels'.

Looking at 'ocean' used as a proper noun, shown in Figure 13, we see some frequent names – British Indian Ocean Territory, Pacific Ocean and Atlantic Ocean. However, we also see a large number of collocates relating to a positive sustainability picture: 'global', 'sustainable', 'clean', 'alliance' and 'blue'. This shows how 'ocean', in the rarer instances it is used as part of a non-geographical name, has positive connotations relating to sustainability and aesthetic.

4.6. Lack of emotion

Semantic tagging of our corpora allows us to identify all words which relate to a certain theme. A lack of emotive representations of the sea was identified in a previous study of newspapers (Authors, 2022). An analysis of the theme of 'emotion' within the two corpora in this study can help identify if, and how, emotive connotations appear. Wmatrix allows us to compute a list of the most frequent sub-categories of emotion (see method above). The top 10 emotion subcategories from the more recent corpus are as follows (Table 4):

Semantic Tag	Relative Frequency (per million tokens)	Top Terms (in order of frequency)
Violent/Angry (E3-)	1,269	Force, threats, threat, attacks, attack, abuse, violence, aggression, violent, threatened
Happy (E4.1+)	417	Delighted, relief, celebrate, happy, reliefs, celebrating, celebration,
Content (E4.2+)	382	Proud, pleasure, pleased, satisfied, satisfy, pride, content
Like (E2+)	378	Like, enjoy, precious, popular
Worry (E6-)	353	Concerned, concerns, concern, care,
Confident (E6+)	235	Trust, confidence, confident, faith

Calm (E3+)	232	Peace, rest, peaceful
Sad (E4.1-)	191	In, suffering, suffered, suffer
Fear/shock (E5-)	104	Fear, formidable, shocks
Dislike (E2-)	96	Objection, objections

Table 4: Results of a search for terms relating to the emotion semantic category

We have not seen emotive connotations closely related to the search terms we have examined in closer detail, and we may be led to believe that emotive connotations are lacking in the type of pages uploaded to the gov.uk website. However, this analysis shows that there is not a complete absence of emotion in the corpus. Indeed, given the identification of a discourse that highlights the 'threat' the sea poses, it is certainly notable that the dominant tag, by far, is that of 'violent/angry'. Whilst 'force', 'attacks' and 'attack' are closely related to the military discourse in the corpus, we see an additional narrative, i.e. that 'threats' need addressing. Collocates of 'threat' include 'face', 'tackle', 'counter', 'deter', 'respond', 'address' and 'adapt'. It should also be noted that 'climate' is the 30th strongest collocate to threat. This may highlight the influential extent of the discourse of 'threat', which pervades other issues in the corpus:

> "With climate change posing an **existential threat** to the region as we know it" (2023-02-09)
>
> "Accidental bycatch in fisheries is **one of the greatest threats** faced by vulnerable marine species" (2020-01-16)
>
> "Russia is not our only threat. We **face a multitude of other challenges"** (2018-06-20)

In examples such as the first above, which describes the broader idea of 'climate change' as an 'existential threat', it is unclear what climate change refers to. It is very possible that this would be linked to the prominent idea of 'rising sea levels', which again frames humanity, and coastal regions as the 'victims', and not the 'perpetrators' of climate change.

There are some positive emotive categories of 'happy', 'content' and 'like'. However, these are not directly related to the sea. Politicians are 'delighted' to 'announce', 'welcome', 'appoint' or 'to see' things like progress, or visions. Pride comes from how 'proud' we are of our 'history', 'achievements', 'tradition' and 'heritage':

> "We have a proud shipbuilding history" – Transport Secretary Grant Shapps (2021-03-22)
>
> "As island nation with a proud maritime heritage, shipbuilding is a vital part" – International Trade Secretary Anne-Marie Trevelyn (2022-03-10)

This analysis shows that emotive connotations are possible and indeed prevalent within government communications, most notably in naval and foreign policy discourses. However, such connotations are not closely linked to advancements or achievements in environmental policy or fond descriptions of the sea.

Another theme of 'physical attributes' is worth looking at to see if there are any prominent descriptions that could link to an aesthetic discourse. Table 5 shows the top terms related to an aesthetic discourse. This reinforces previous findings.

Semantic Tag	Relative Frequency (per million tokens)	Top Terms (in order of frequency)
General appearance and physical properties (O4.1)	2219	Conditions, set, circumstances, sets,

Colour and colour patterns (O4.3)	704	Green, blue, red, greener,
Shape (O4.4)	630	Line, shape, level, square,
Judgement: Beautiful (O4.2+)	547	Clean, attract, smart, majesty, beautiful
Judgement: Ugly (O4.2-)	459	Mark, marks, marking, litter,
Temperature: Hot (O4.6+)	407	Fire, heat, heating, warming,
Texture (O4.5)	193	Hard, flexible, flexibility, soft
Temperature: Cold (O4.6-)	126	Cold, cooling, frozen, freeze

Table 5: Results of a search for terms relating to the physical attributes semantic category

The use of 'blue' is notable and has been discussed. 'Line' often relates to the fishing discourse, and the prohibition of 'rod and line'. 'Mark' often relates to 'trade mark', again linking back to the economic discourse prevalent in the previous analyses. It may be surprising to see a relatively low frequency of 'warming', from 'global warming', suggesting the term is also not yet widespread. Discussion of 'heating' bills, fuel and buildings; and 'fire' drills, doors, and rescue services are both more frequent than that of global warming. We have 'hard' work and 'hard' borders – again presenting the territorialization and economic discourses. There are, however, 'beautiful' landscapes, beaches, wetlands, coastline and countryside.

4.7. Comparative analysis of the two corpora

The majority of the findings discussed so far have been exclusively related to the 2018-2023 corpus. The data we collected has given us scope to include a diachronic element to this study and compare this recent corpus to a corpus from the earlier 2010-2017 time period.

Keywords can provide an overview of the main differences between the two corpora. The two corpora are excellent for keyword comparison, as they had identical criterion for collection, besides time period. Thus, the keywords identified should highlight differences in content, rather than genre or medium. Table 6 and Table 7 present the results of this keyword analysis. The simple maths ratio for the terms in these tables ranged from 5.95 to 1.91 (these can be found in the appendix).

The 2010-2017 corpus showed a greater focus on military actions, likely due to mentions of the situation in Afghanistan and Libya. This is perhaps unsurprising given we saw that our search term 'navy' occurred more than twice the frequency within this corpus, whereas the 2018-2023 corpus showed a greater focus on travel requirements, likely due to the COVID-19 pandemic. This illustrate how narratives over long periods of time can be influenced by specific contexts.

Theme	Term
Military / War-related	Afghanistan, marines, afghan, HMS, commando, royal, helmand, corporal, Libya, regiment, squadron, helicopter, commanding, troops, navy, task, crown, naval, commander, Britain, Fallon, lieutenant, Michael, battalion, RAF, patrol, troop
Pronouns	his, he, him, her, i, me, my
Year	2012, 2011, 2014, 2013, 2010
Other	picture, copyright, think, very, had, growth, reform, Cameron, David, budget, coalition

Table 6: Top 50 keywords for the 2010-2017 corpus

Theme	Term
Travel	travel, entry, travelling, passport

Pandemic	Covid-19, pandemic, coronavirus
Economy	VAT, goods, customs, tariff, licence, regulations, excise, hmrc
Sustainability	zero, net, plastic
Year	2021, 2022, 2019, 2023, 2018, 2020
Legal	v, read, page, code, decision, section
Pronouns	your
Bureaucracy	check, application, advice, paragraph, requirements, claim, notice, guidance, apply
Other	FCDO, kb, purposes, or, Ukraine, relevant, pdf, 00, certificate, Australia

Table 7: Top 50 keywords for the 2018-2023 corpus

Interestingly, there is a rise in terms linked to sustainability such as 'plastic' and 'net zero', which parallel the adoption of measures related to plastic pollution and emissions reduction. However, economic and bureaucratic themes showed an even greater rise in frequency. Terms relating to economic issues, 'vat', 'goods', 'tariff', 'regulations' consolidate the previous findings regarding their prevalence. Some of the more bureaucratic terms, 'check', 'advice', 'apply' could be explained, in part, by the more frequent pronoun 'your', suggesting that these pages are directed more to the user, reflected in travel advice pages and the increased use of the website during the pandemic.

The collocates for 'sea' as a common noun were nearly identical to those for 2018 – 2023 (shown in Figure 3 above). Territorial collocates 'international' and 'domestic', economic collocates 'trout' and 'salmon', transport collocates 'passenger' and 'lane', and threat collocate 'rise' all occurred.

Figure 14 shows the collocates for 'sea' as a proper noun. This does show some interesting differences. 'oil' and 'gas' are much stronger collocates in this older corpus. 'Gas' is almost half as frequent within the 2018-2023 corpus as a whole - occurring 3.18 times per 10,000 tokens, compared to 6.34 times per 10,000 tokens. This suggests there has been a shift away from talking about gas with the sea. 'Oil', however, has an almost equal relative frequency of 5.71 in 2018-2023, compared to 5.69 in 2010-2017. This suggests there is still much discussion of 'oil'. Figures 15 and 16 show the top 20 collocates from the two corpora for 'oil'.

In 2018-2023 there is the strong collocate of 'tie_v'. This relates to 'tied oil', oil not used for fuel. An increase of discussion around 'tied oil', 'duty', 'controlled' and 'spill' (contrasted to 'price', 'revenue', 'reserve' and 'resource' in 2010-2017) may suggest some recognition of the dangers of oil, and disconnect it from discussion with the sea. This also leads to a loss of the collocate 'pollution' however, perhaps in preference for 'spill', which increases in frequency.

Looking at 'marine' in 2010-2017, there is very similar prominence of 'territorialisation' of the sea Figure 17). The primary difference here is that we also see 'energy', 'science' and 'engineering'. This suggests there used to be a sub-discourse surrounding the term 'marine' linked to utilizing the marine environment for energy purposes. Counter-intuitively, this is less prevalent in the 2018-2023 corpus despite its strong utilitarian focus.

'Ocean' is less frequent in the 2010 – 2017 corpus. The term occurs in 1111 instances as a proper noun, and only 277 instances as a common noun. This is in contrast to 877, and 902 instances respectively, in the 2018-2023 corpus. Despite the low frequency, we can see from Figure 18 that there was a prominent sustainability discourse surrounding ocean when used as a common noun, with links to 'humanity' and 'world's'. We can also note a clearer view of environmental concerns, with terms such as 'heat', 'acidification', 'temperature' and 'melt'. The idea of needing to 'safeguard' and 'protect' the

ocean is more prominent in the 2018-2023 corpus though. Furthermore, in the vast majority of instances as a proper noun, there is no identifiable discourse of sustainability. This is shown in Figure 19, where terms relating to warfare dominate the top collocations. The collocate 'tsunami' is interesting as it relates to the ocean being framed as a threat (probably linked to the 2011 Fukushima accident), and we can note that this is not as frequent as rising sea levels, nor present in the top collocations for 2018-2023.

Semantic annotation of the 2010-2017 corpus reveals extremely similar top categories of emotion, with primary differences stemming from the increased military discourse. We see the emotive category of bravery increase with words like 'courage', 'daring' and 'bravery'. 'Blue' and 'clean' have certainly seen an increase going into 2018-2023, but the category of 'beautiful' has decreased due to less frequent evaluative words like 'illustrious', 'attract', 'impressive', and 'amazing'. This likely links to the more prominent bureaucratic discourse as shown, as well as perhaps a tendency to congratulate troops with these terms in the military discourse of 2010-2017.

From this further analysis, we can identify that the time-specific topics of travel and military do not have a great impact on the top themes of economic usage, territorialization and threats. We can note that some areas of sustainability, such as limiting 'gas' and, 'oil', 'net zero' emissions and the safeguarding of the ocean have seen an increase but have also perhaps been buried under an increasing discourse of bureaucracy and economic regulation. There is also a definite lack of positive, emotive representations of the 'sea'.

5. Discussion

Our findings corroborate previous findings and studies: the sea is, before anything else, represented as a source or riches, a site of economic activities and an opportunity for profit. Threats are defined as threats to the 'sustainable' exploitation of the ocean, understood as the non-exhaustion or pollution or destruction of the resources the seas brings. Additionally, the social dimension of sustainability is not prominent in the corpora. The sea is valued, and it needs to be protected, but mainly from an economic, utilitarianist perspective. Contemporary public narratives overwhelmingly construct the ocean as a "development space" (United Nations' own terminology; UNECA, 2016: 5), thereby embedding it within global growth agendas and a blue economy paradigm. In this framing, the sea is not apprehended as a relational or cultural milieu, but rather as a resource. The ocean is thus valorised primarily for its extractive and economic potential, from fisheries to minerals to transport, while their ecological and social concerns are secondary.

This economic imaginary positions the ocean as a new frontier for accumulation (Campling and Colás, 2018) and reduces the ocean's complex materiality to a mere reservoir of resources, reinforcing a utilitarian ontology that privileges exploitation over stewardship (Helmreich, 2007). Back in 1999, Steinberg was already highlighting how ocean imaginaries had emerged from the structural contradictions within the spatiality of capitalism (an empty void annihilated by hypermobile capital; a fragile and resource-rich space in need of management for sustainable development; and as a site of historical glory), an argument that has since been used to explain the emergence of the blue economy (Mallin and Barbesgaard, 2020). This economistic vision is indeed not incidental but constitutive of the blue economy discourse itself, which privileges growth-oriented narratives over ecological or social justice concerns (Silver et al., 2015; Voyer et al., 2018; Ertör and Hadjimichael, 2020; Author et al, 2023; Nogué-Algueró et al, 2025; Kelling et al, 2026). The ocean is thus rendered legible above all as an economic asset, to be protected insofar as it secures future revenues rather than as a living space for

communities, cultures, and non-human life. Author (2022) further demonstrates that these imaginaries reproduce global hierarchies, enabling powerful actors to territorialise the ocean in ways that consolidate their control over strategic resources. As a result, the conservation rhetoric acts not as an alternative to exploitation, but as a necessity to safeguard assets and ensure the continuity of capital accumulation. The ocean is thus above all represented as an economic space, where profit and geopolitical advantage are privileged over stewardship, justice, and cultural connection (Fusco et al, 2022; Penca et al, 2025).

The discourse of threat and danger is framed in a way that fits with this economic and weak sustainability discourses. Safety and security are prerequisites for economic growth, investments and a profitable maritime economy. The sea, and especially the 'ocean' is represented as in danger, in need of protection, but 1) the main rationale is not moral but economic (e.g., risk of depleting fish stocks entailing negative economic impacts), and 2) the sea itself is a source of threats for human beings (notably via sea level rise) as opposed to the human cause of sea level rise via climate change effects. Negative feelings are associated with the sea, such as sea level rise, pollution, threats. Contemporary imaginaries increasingly construct the ocean as a space of danger, where instability, disorder, and risks are projected and managed. This framing spans ecological hazards (sea-level rise, acidification) through to geopolitical tensions over sovereignty and maritime boundaries, and sociopolitical anxieties around migration, piracy, and naval confrontation (Author, 2022). Following Steinberg (2001), a discourse of threat is central to ocean governance regimes, which prioritise the uninterrupted circulation of goods and capital at sea. In this sense, the sea is securitised because it is perceived as jeopardising the infrastructures of global capitalism. The discourse of maritime threat is thus tightly interwoven with economic and weak-sustainability frameworks, where safety and security are seen as preconditions for investment and growth.

The sea is simultaneously imagined as the victim of environmental threats, requiring protection to safeguard future production, and as a source of hazards that must be managed to prevent disruptions to trade and capital flows. In this logic, the depletion of fish stocks is concerning primarily for its impact on returns, not for the collapse of biodiversity; flooding and sea-level rise are framed as external threats emanating from the ocean, obscuring their anthropogenic drivers such as greenhouse gas emissions and coastal mismanagement. These securitised narratives cultivate negative emotional associations (e.g. pollution, flooding) that reinforce the sea as a hazardous frontier to be contained, rather than a living system demanding a form of holistic stewardship.

Underlying this securitisation is a territorialisation dynamics that demands ever-greater control and governance at sea. A managerial logics renders the ocean as a technical theatre populated by metrics, risk registers, and asset maps, rather than as a political and affective milieu. Ferguson's (1990) critique of development bureaucracies as "anti-politics machines" is relevant here: social and ecological struggles are depoliticised, recast as neutral "problems" amenable to technical fixes. In the maritime domain, this translates into calls for coastal surveillance, for vessel-tracking systems, and standardised environmental assessments that hide the underlying power relations structuring access to marine territories. As Young (2002) shows, such technocratic framings marginalise cultural and emotional attachments to nature, privileging data-driven governance over lived experience. Foucault's (1991) notion of governmentality further illuminates how these regimes seek to optimise oceanic populations and resources, aligning marine life with calculable objectives of productivity. This results in a governance assemblage in which the sea is stripped of its political, cultural, and emotional dimensions, reduced to a tractable "space" to be territorially ordered, technically managed, and economically exploited. Consequently, the blue economy can be seen as "a new governance tool […] used to articulate appropriate use within the oceans" (Choi, 2017).

Yet dominant marine policy actors are governments and economic stakeholders whereas local communities, NGOs and civil society remain at the margin of decision-making processes (Flannery et al., 2016; Author, 2022; Evans et al., 2023). In this context, the notion of *ocean citizenship* reveals a tension between economic framings of the sea on the one hand and relational imaginaries that emphasise sense of belonging, emotions and duties, on the other hand. While dominant narratives continue to privilege the ocean's economic value, critical scholarship demonstrates that citizenship cannot be reduced to a utilitarian awareness of marine "assets." Rather, it hinges on cultivating place-based attachments and emotional resonance with marine environments. McKinley and Fletcher (2010) show that personal connection to the marine environment are key factors in developing marine citizenship. O'Halloran and Silver (2022) similarly demonstrate how literacy initiatives that evoke emotions (sadness and awe) are more effective in connecting people with the marine environment, increasing ocean literacy, and generating positive behaviour towards ocean conservation, illustrating that affect is not peripheral but constitutive of stewardship. Buchan et al. (2023) argue that marine citizenship must be reimagined as both a right and a responsibility, entitling individuals not only to know about ocean issues but to intervene in shaping the policies that govern them. Lotze (2020) suggests combining emotion (love) and reason (knowledge) "to transform our collective relationship with [and heal] the ocean".

Over the last decade, the natural environment has increasingly been described in economic and utilitarian terms (as reflected in the notion of natural capital and ecosystem services), so that forests, soils, rivers, the ocean, etc. are presented as assets that produce benefits to people and can be valued, priced, and managed within markets (the WWF itself valuing the ocean's assets at $24 trillion). It can be argued that this is a pragmatic communication and policy tool: placing a monetary value on nature can translate ecological functions into a language that is familiar to decision makers and people alike, and one is more likely to protect what is "valuable". However, this approach only contributes to sideline the inherent and intrinsic value of nature, and can ultimately legitimise extraction, offsetting, and market-based solutions that fail to address the underlying drivers of ecological decline. Economistic framings are not neutral: they reproduce a vision of the ocean as a governable economic space, marginalising alternative imaginaries rooted in cultural and affective connections. To mobilise a robust and socially inclusive ocean citizenship that fosters ocean stewardship, narratives must therefore weave together economic rationale, empirical knowledge, and emotions. Only by speaking to people as political and emotional subjects, not merely as consumers or producers, can collective care and political will be galvanised for sustainable ocean futures.

6. Recommendations

A public communication strategy that genuinely fosters *ocean citizenship* and *sustainability* must break away from the narrow utilitarian framings and instead cultivate a plural, emotional, and political relationship with the sea.

6.1. Valuing the ocean through emotions

Challenges to the dominant economic discourse that reduces the ocean to a depoliticised reservoir of tradable assets is unlikely to emerge from public communication. But public policy stakeholders which want to further develop ocean awareness among the wider public can contribute to the promotion of a narrative about the sea that is not just utilitarian (revenue, job creation) but also emotional. To improve communication in a way that fosters more interest in the ocean as a place, communication should adopt a more emotional and less managerial tone. Beyond an economic, utilitarianist narrative,

there are other values linked to the sea. Cultural, ecological, historical, and spiritual values must be foregrounded. Similarly, a less technical and less utilitarian communication will foster positive engagement with and by civil society actors and eventually reduce their marginalization in marine policy discourse.

6.2. Highlight what positive aspects of the sea are specifically being protected

There is a noticeable relative lack of discussion surrounding the benefits of the marine environment beyond the economy. Narratives describe the dangers that are being faced, such as 'plastic', 'pollution', and 'rising sea levels'. This results in the technical discourse of plans and projects to control these dangers, which reconsolidates the idea that the ocean is dangerous, and an empty void (Authors, 2016). Such a focus on controlling the dangers also contributes to the focus on 'maintaining' the status quo, which can be linked to climate change inertia (Remling, 2023). To move past these narratives, it is important to define and describe the positive aspects of the sea, and what it is we are trying to protect. Through this, more positive emotion and evaluation of the sea can be imputed into the narrative. For example, "limiting plastic" should be linked to "protecting the biodiversity in our British seas", as opposed to "conservation areas", "marine plans" and "acidification".

6.3. Incorporate more hopeful narratives

Our analysis revealed prominent discussions of 'threats' and 'dangers' which encourage worry, rather than hope. For example, the 'sea' is very regularly framed as a threat through the collocation 'rising sea levels', suggesting we must control, and be protected from, the sea. Worry can encourage climate action, but too much can be debilitating and encourage apathy; it is important to simultaneously provide 'hope' to communicate to both engaged and disengaged audiences (Smith and Leiserowitz 2014). In particular, 'rising sea levels' portrays the sea as an agent of climate change, rather than the victim. This can partially explain the distinct lack of a discourse about protecting the sea. Stressing the anthropogenic causes of climate change can re-establish the sea as being 'damaged' by the effects of climate change. Such a recognition can come from an emphasis on local mitigation efforts portrayed as opportunities for innovation, which has been shown to shift the narrative towards more empowering, and hopeful ambitions (Tenali and McManus, 2022).

6.4. Use 'Ocean' rather than 'sea' when engaging the public on sustainability

It is important to recognise the current contrasts between the terms 'sea' and 'ocean' revealed by our analysis. In contrast to the threat connotations of 'rising sea levels', the 'ocean' is described as requiring protection and safeguarding. The 'ocean' is also construed as belonging to the 'world', as a 'global ocean' of awe-inspiring size. These more positive connotations consolidate the need to protect it, and helps to avoid the unhelpful managerial, territorialisation and threat discourses related to the sea. This suggests that 'ocean' could be a much more effective term than 'sea' when engaging the public on sustainability and increasing awareness of its importance.

7. Conclusion

Enhancing public perception of the sea and ocean citizenship requires targeted communication strategies based on an analysis of current representations of the sea and their bias. This article provided a systematic account of the way the sea is represented by HMG by applying corpus linguistic methods to the analysis of .gov textual production.

Our findings point to an imbalance of utilitarianism versus sustainability narratives, a discourse presenting the sea as a vector of dangers rather than itself endangered, an emphasis on the need to territorialize the sea to better control activities and flows, a managerial and technical approach to marine management and ocean governance, and a lack of emotional discourse.

This identifies the main challenges when it comes to enhancing public perception of the sea and fostering ocean citizenship: to better value the ocean through emotions, to highlight the benefits of protecting the marine environment beyond economic opportunities, and to instil more hopeful and aspirational narratives in relation to the global ocean.

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Appendix

Theme	Term (simple maths ratio)
Military/War-related	Afghanistan (4.42), marines (3.54), afghan (3.07), hms (3.01), commando (2.89), royal (2.8), helmand (2.62), corporal (2.54), regiment (2.51), libya (2.5), squadron (2.42), helicopter (2.36), navy (2.31), commanding (2.29), troops (2.26), task (2.21), crown (2.17), naval (2.16), britain (2.14), commander (2.14), lieutenant (2.05), fallon (2.03), raf (2.00), Michael (2.00), battalion (1.97)
Pronouns	he (2.9), his (2.9), him (2.44), her (2.42), I (2.34), me (2.21), my (2.17)
Year	2012 (2.5), 2011 (2.43), 2014 (2.23), 2013 (2.22), 2010 (1.92)
Other	Picture (2.72), copyright (2.35), think (2.19), *(2.15), very (2.05), had (2.02), growth (2.01), reform (1.95), Scotland (1.93), was (1.92), David (1.92), budget (1.92), here (1.91)

Table 8: Top 50 keywords for the 2010-2017 corpus

Theme	Term (simple maths ratio)
Travel	Travel (5.95), entry (2.72), travelling (2.46), passport (2.28)
Pandemic	Covid-19 (3.78), pandemic (2.47), coronavirus (2.43)
Economy	Vat (4.42), goods (3.94), customs (2.43), licence (2.42), regulations (2.41), tariff (2.39), excise (2.33), hmrc (2.24)
Sustainability	Zero (3.46), net (2.69), plastic (2.63)
Year	2021 (5.3), 2022 (5.17), 2019 (4.09), 2023 (3.4), 2018 (3.18), 2020 (2.27)
Legal	V (3.87), read (3.11), decision (2.35), page (2.33), code (2.32), section (2.27)
Pronouns	Your (2.78)
Bureaucracy	check (2.99), application (2.87), advice (2.83), requirements (2.63), paragraph (2.62), notice (2.52), guidance (2.52), claim (2.52), apply (2.47)
Other	Fcdo (3.05), or (2.49), kb (2.47), purposes (2.41), Ukraine (2.33), relevant (2.33), pdf (2.3), if (2.29), contact (2.26), 00 (2.25)

Table 9: Top 50 keywords for the 2018-2023 corpus