

# **Senate Standing Committee Foreign Affairs, Defence and Trade**

Parliamentary inquiry – 20 March 2018

## **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implication of climate change for Australia's national security –  
20 March 18 - Q1 - Gallacher

**Question reference number:** 1

**Senator:** Alex Gallacher

**Type of question:** Spoken, Hansard page 4

**Date set by the committee for the return of answer:** 6 April 2018

### **Question:**

**CHAIR:** ...Perhaps I could put two things to Mr Grzeskowiak before I go to Senator Whish-Wilson for the first 15 minutes of questions. Can the committee get the number of deployments over the last 15 years—in five-year lots—where the whole-of-government approach has been to deploy Defence in humanitarian efforts—floods, cyclones, tsunamis? Can we get that picture over the last 15 years?

**Mr Grzeskowiak:** I think we can take on notice the deployments that we've undertaken—

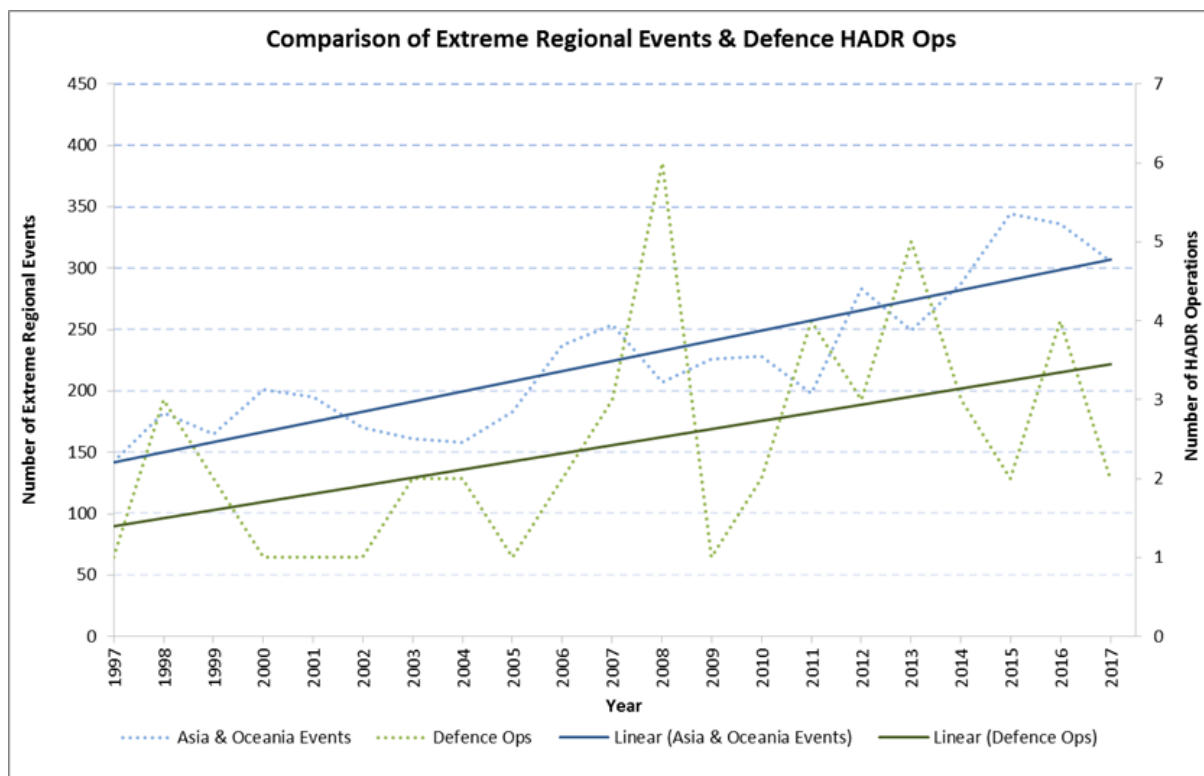
**CHAIR:** I've read your submission, and there has been an increase, but I'd just like that to be a quantified increase over the rolling five years.

**Mr Grzeskowiak:** We'll take that on notice.

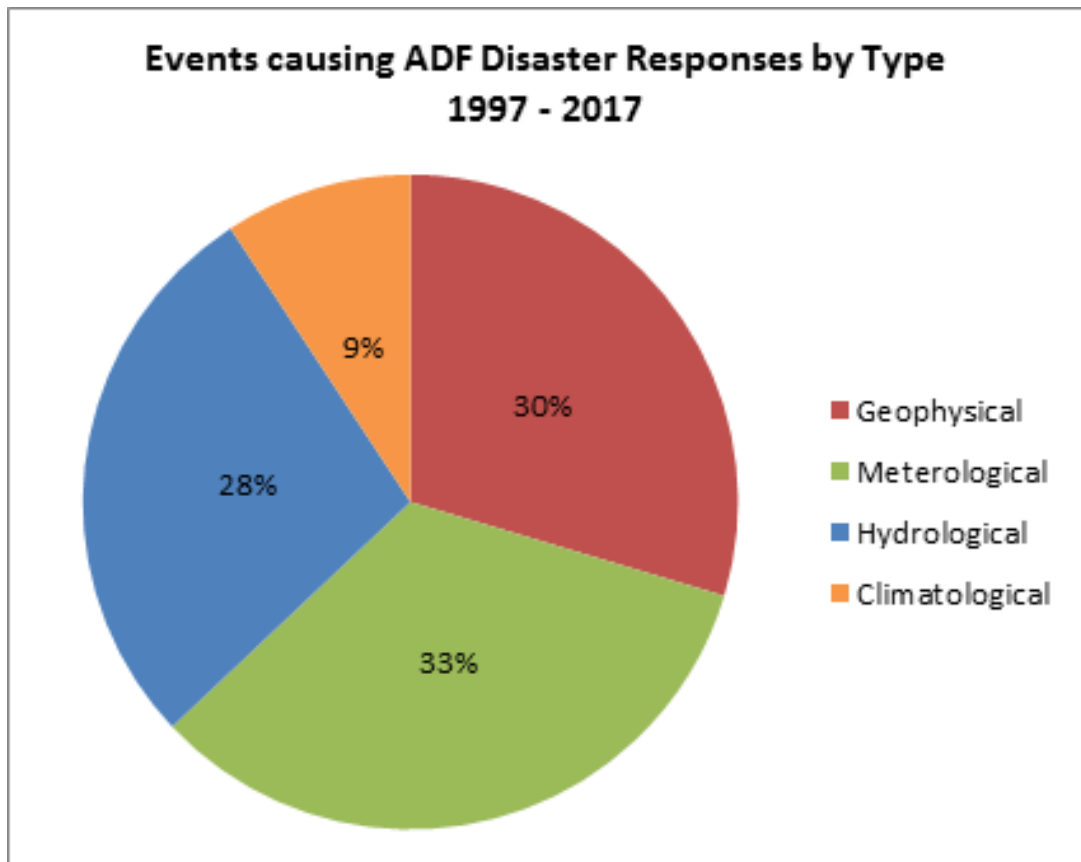
### **Answer:**

Defence maintains an operations dataset which includes humanitarian assistance and disaster response deployments. From a statistical perspective the number of Defence operations is relatively small, so for increased validity in trend modelling we also use data on extreme events such as floods and cyclones sourced from other organisations including but not limited to the Department of the Environment and Energy, the Department of Home Affairs, the Bureau of Metrology, the Commonwealth Science and Industrial Research Organisation and the re-insurance industry.

The chart below shows the Defence Humanitarian Assistance and Disaster Response (HADR) operations for the last 20 years (green line- numbers on right axis) sourced from our internal dataset and the trend in extreme events within our region (blue line-numbers on left axis) over the same period sourced from the natural catastrophe data set maintained by Munich Re. A linear regression trend analysis reveals that there is a comparable upwards trend for both disaster-related events and operations. Earlier analysis conducted in 2013 using Bureau of Metrology data also indicated a strong statistical correlation between more extreme storm events and Defence Force HADR deployments.



The second graph shows the breakdown of Defence HADR response operations over the same 20 years period by type of event: climatological (heat, fire, drought); hydrological (flood); meteorological (cyclone, storm) and geophysical (earthquake, tsunami).



## **Senate Standing Committee on Foreign Affairs, Defence and Trade**

Parliamentary inquiry – Implications of Climate Change for Australia's  
National Security – 20 March 2018

### **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implications of climate change for Australia's national security -  
20 March 18 - Q2 – Gallacher

**Question reference number:** 2

**Senator:** Alex Gallacher

**Type of question:** Spoken, Hansard page 4

**Date set by the committee for the return of answer:** 6 April 2018

#### **Question:**

**CHAIR:** And the other thing: there's a mention of a strategic assessment of Defence estate. I don't know whether there are any confidential bits in that. But appreciating that we've been at a lot of our defence infrastructure for many years, are there any of those sites that are under consideration of being moved? So, perhaps you could take on notice—you've got how many sites?

**Mr Grzeskowiak:** It's 400 properties within Australia.

**CHAIR:** So, which ones would be impacted by climate change implications? And I've read down to the level where you're talking about increased humidity, increased rainfall and the difficulty of maintaining troops in those sorts of environments. So if we could get a picture of your strategic thinking about the asset size of your bases, I'd really appreciate that.

**Mr Grzeskowiak:** I'll take that on notice, but we've done a report, in 2013, looking particularly at the effects of climate change, in particular sea level rise, on existing defence properties. And we use that report in our current planning. We've also got another study underway, which won't come to fruition until next year, looking at our training areas and ranges with a view to what we think the impact from climate change might be in the broad. We would see much of the information that's in those reports as information that we wouldn't wish to release in a public environment.

**CHAIR:** Okay. Well, we'll ask the question and you'll answer it on notice and we will see whether that gives us a baseline of information for Defence in the report.

**Answer:**

- In 2013, Defence completed a report on key Defence sites, titled '*Adaptation and planning strategies to mitigate the impact of climate change induced sea level rise, flooding and erosion at selected Defence sites*'.
- The report determined that some Defence sites would be at risk from climate change by 2070.
- Defence is also progressing a report focussing on training areas, titled '*Adaptation and planning strategies – assessment of the impact of climate change induced sea level rise, flooding and erosion at selected Defence training areas and ranges.*'
- This report is scheduled for completion in mid-2018.
- For security reasons, Defence is unable to disclose which Defence sites are at risk.

## **Senate Standing Committee on Foreign Affairs, Defence and Trade**

Parliamentary inquiry – Implications of climate change for Australia's national security – 20 March 2018

### **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implication of climate change for Australia's national security - 20 March 18 - Q5 – Reynolds

**Question reference number:** 5

**Senator:** Linda Reynolds

**Type of question:** Spoken, Hansard page 13

**Date set by the committee for the return of answer:** 6 April 2018

#### **Question:**

**Senator REYNOLDS:** Would you be able to take that on notice with respect to where the civilian shipping industry is going in terms of fuel efficiency and reduction of emissions and how that compares with what Navy is currently doing and what you might be looking at for the future surface combatants, in particular?

**Mr Grzeskowiak:** We can take that on notice.

**Air Vice Marshal Hupfeld:** I think that will come to the heart of Senator Fawcett's question in answering the same sort of—

**Senator REYNOLDS:** It does, yes.

**Air Vice Marshal Hupfeld:** To provide a little bit more insight into it, there is also a performance factor in terms of what types of fuel sources you have based on the design of the engines, and, in the fullness of time, as technology enables our solutions, we'll be aiming to have technologies that can deliver a better fuel emission—

**Senator REYNOLDS:** I just ask because I know there are moves in my home state through a national company to see how the LNG carries themselves—they are great polluters—and how they can convert to use domestic gas as a new fuel source.

#### **Answer:**

The majority of the civilian shipping industry continues to employ high sulfur content heavy residual fuels which are a known source of emissions. The use of these fuels in the civilian shipping industry is being addressed by the International Maritime Organization.

In contrast to the civilian shipping industry, Navy primarily uses distillate fuels in its warships. Distillate fuels have superior emissions qualities when compared to high sulfur content heavy residual fuels. They burn cleaner.

The exception to this is HMAS *Sirius* - a former civilian commercial tanker that burns Heavy Fuel Oil. HMAS *Sirius* will be withdrawn from service following the introduction of the new tankers under project SEA 1654, Maritime Operational Support Capability. It is currently anticipated that withdrawal of *Sirius* will be in the latter half of 2021.

In the assessment of future warships, Navy considers the environmental footprint of designs and their performance characteristics as a whole. This information is then used as an input to the technical analyses that support subsequent evaluations.

# **Senate Standing Committee on Foreign Affairs, Defence and Trade**

Parliamentary inquiry – 20 March 2018

## **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implication of climate change for Australia's national security - 20 March 18 - Q6 – Patrick

**Question reference number:** 6

**Senator:** Rex Patrick

**Type of question:** Spoken, Hansard page 19

**Date set by the committee for the return of answer:** 3 April 2018

### **Question:**

**Senator PATRICK:** Air Vice Marshal, I put some questions on notice which you helpfully answered. I want to seek some clarification on some of the details of those answers—they had a 14 February return date. I asked for the actual expenditures on HADR operations over the last five financial years. It wasn't clear to me what was included. We can see that expenditure in 2012-13 was about \$2 million, going to \$6.5 million, \$3.1 million and \$5 million, so it varies each year. What's included in those costs? Are those costs just fuel and logistics or do they include NPOC or any asset value?

**Air Vice Marshal Hupfeld:** I'll have to take that detailed question on notice to get you the exact answers, but most of the time it's only those additional costs that have come above what our operating requirements are. For example, flying hours for aircraft that contribute are included in the normal flying hours rate and the cost of that.

### **Answer:**

The costs attributed to HADR tasking are only the net additional costs incurred as a result of the operation. These are specific additional expenses that are not provided in baseline funding. The costs vary depending on the support provided to each operation but include travel costs, any additional maintenance as a result of the activity and cleaning of equipment for international operations to comply with Australian quarantine requirements.

Net additional costs do not include any costs associated with the purchase of capital equipment.



## **Senate Standing Committee on Foreign Affairs, Defence and Trade**

Parliamentary inquiry – Implications of climate change for Australia's national security – 20 March 2018

### **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implication of climate change for Australia's national security - 20 March 18 - Q7 – Patrick

**Question reference number:** 7

**Senator:** Rex Patrick

**Type of question:** Spoken, Hansard pages 20-21

**Date set by the committee for the return of answer:** 6 April 2018

#### **Question:**

**Senator PATRICK:** Air Vice Marshal, I was discussing the plans you had for HADR this season. Perhaps you could take this on notice: had any of those assets that you had online or intended to be available been called upon for the Victorian fires, would they have been available? In some sense I'm reflecting on Cyclone Yasi. I'm sure you probably remembered we couldn't get Manoora, Kanimbla or Tobruk to assist when the Queenslanders needed help. I'm sure you've addressed some of those availability and preparedness issues. How you do measure yourself for this season?

**Air Vice Marshal Hupfeld:** The first part of your question refers to this weekend's events in Victoria?

**Senator PATRICK:** That's correct.

**Air Vice Marshal Hupfeld:** I'll have to confirm for you on notice what Defence assets may have been used, if any. For the high risk weather season, which is still in place until the end of April in this current season and then will start again for the next year's season, we are looking at our preparedness requirements. Every year the Chief of the Defence Force puts forward his Preparedness Directive, which states the levels of readiness required and the readiness notice we would need to achieve to meet all of the security threats and risks identified. I won't explain the detail of those, obviously. To do that would start—

**CHAIR:** We will suspend proceedings here until after the division.

**Answer:**

There were no Defence assets used during the Southern Victorian bush fires in mid-March 2018.

Defence, through the Victorian Joint Operations Support Staff, was in close liaison with the Victorian State Control Centre throughout, and whilst no units were actually on 'stand-by', Defence was postured to provide support if requested.

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Parliamentary inquiry – Implications of climate change for Australia's national security - 20 March 2018

### **ANSWER TO QUESTION ON NOTICE**

Department of Defence

**Topic:** SSCFADT - Implication of climate change for Australia's national security - 20 March 18 - Q8 – Patrick

**Question reference number:** 8

**Senator** Rex Patrick

**Type of question:** Spoken, Hansard page 22

**Date set by the committee for the return of answer:** 6 April 2018

#### **Question:**

**Air Vice Marshal Hupfeld:** As an example, we have analysis and I can show you some graphs that talk about the severity of storms, for example, and the number of storms. We have that data that goes back to the 1970s. We've done modelling analysis to examine what that would be, and that starts to give us an indication as to how we might need to respond into the future. If that's the sort of methodology that you'd like to see, I can take that on notice and provide that for you.

**Senator PATRICK:** Yes, just saying, 'This is how we approach the forecasting, and therefore here's our methodology,' within the scope of what you would view to be your other, more important tasks—and I understand you have a primary function—and how you might then work out what goes into that.

**Air Vice Marshal Hupfeld:** As soon as we start to talk about allocation of assets, though, that's when it becomes classified. We can talk about methodology in terms of how we do the analysis but not about how we would then break that down and the notice to move and the readiness of various or specific assets. That isn't data that we'd be able to provide unless it were a classified-level session. That would be in camera, I guess.

**Senator PATRICK:** Sure.

**Air Vice Marshal Hupfeld:** That might be the only other way of doing it.

**Senator PATRICK:** Yes, some sort of in camera session. Maybe you could try to respond to that with the methodology to the extent that you're comfortable.

**Air Vice Marshal Hupfeld:** Just to confirm, the methodology we use to examine what our preparedness is?

**Senator PATRICK:** Your preparedness requirements.

**Air Vice Marshal Hupfeld:** What they would be as we assess that against—

**Senator PATRICK:** For example, what inputs do you take into consideration and how you might then juggle the competing inputs to then say, 'That's how we would then decide what assets we might think about allocating,' without necessarily going into the allocation—just the methodology of what you do in and around HADR specifically, rather than any more classified function.

**Air Vice Marshal Hupfeld:** Sure, we'll have a look at that. If I could add a caveat, indeed the response to the question that we tried to answer there was about humanitarian assistance and disaster relief. What we will also aim to do is to provide the distinction between broad humanitarian assistance and disaster relief, and indeed, those that we assess to be the result of climate related disaster response. For example, in some of the data that's there, that includes earthquake elements, but we can look at extreme weather events, storms and other aspects.

**Senator PATRICK:** That would be appreciated, thanks.

**Answer:**

Defence preparedness requirements are set against future contingencies using a risk management approach where risk is minimised by ensuring Defence holds the required number and type of Defence Elements at readiness for the most demanding contingency and at the most demanding scale of response.

This means that Defence Elements are normally held in readiness levels against multiple contingencies, which may include humanitarian assistance and disaster response. This readiness notice is classified. Additionally, for the high risk disaster season Defence ensures that certain Defence Elements are allocated specifically for humanitarian assistance and disaster response. Specific readiness for the high risk disaster season is unclassified.

Defence uses a mix of statistical, predictive and prescriptive intelligence methods to model the probability, scale, profile and location of future humanitarian assistance and disaster contingences. This includes integration of Defence data with environmental and disaster risk data from a range of sources including but not limited to the Department of the Environment and Energy, Department of Home Affairs, Bureau of Meteorology, Commonwealth Science and Industrial Research Organisation, and the reinsurance industry.