

# Which cumulative effects?

## Effect assessments at science-policy boundaries

Judith Floor, 1 July 2016



# Outline

---

- Significant effect at the science-policy boundary
- 2 case studies
  - Mussel seed fishery
  - Powerboat race
- The political aspects of cumulative effects

# Significant (cumulative) effects

---

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a *significant effect* thereon, either individually or in combination with other plans or projects, shall be subject to *appropriate assessment* of its implications for the site in view of the site's conservation objectives” (article 6.3, Habitat Directive 92/43/EEC)

# Significant (cumulative) effects

---

- Controversies over what is allowed in nature areas have transformed in disputes over the assessment of significant effect

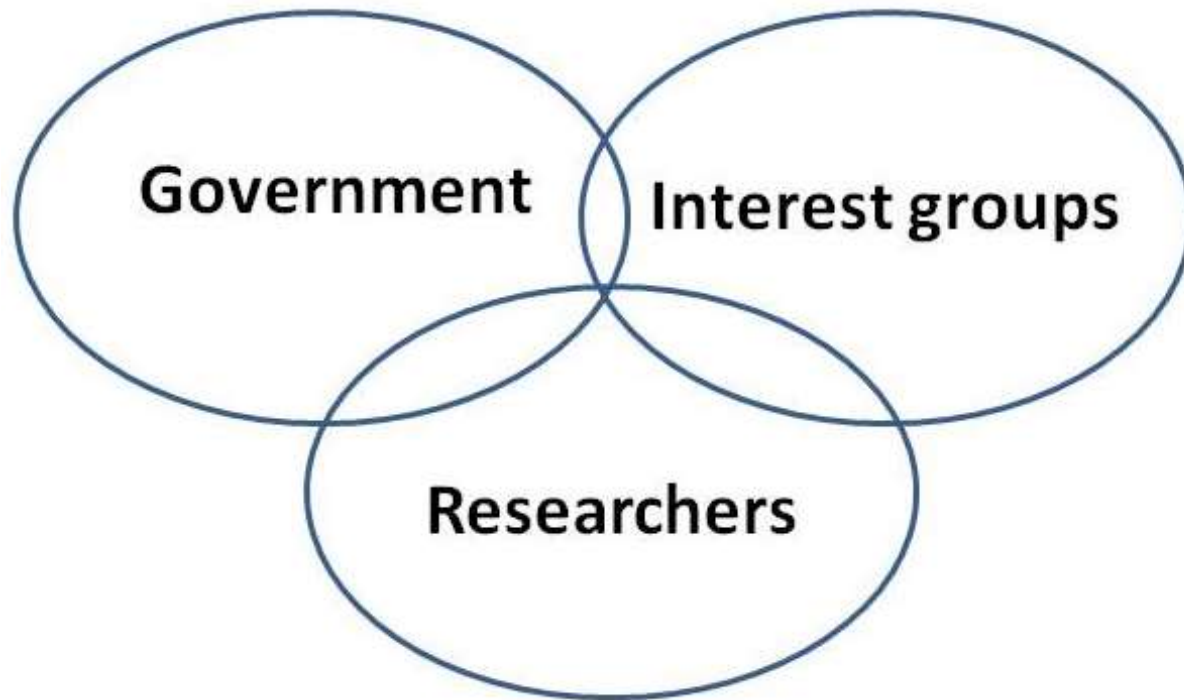
# Appropriate assessments

- Effect assessment: knowledge of what will probably happen is combined with a value judgement on what is allowable



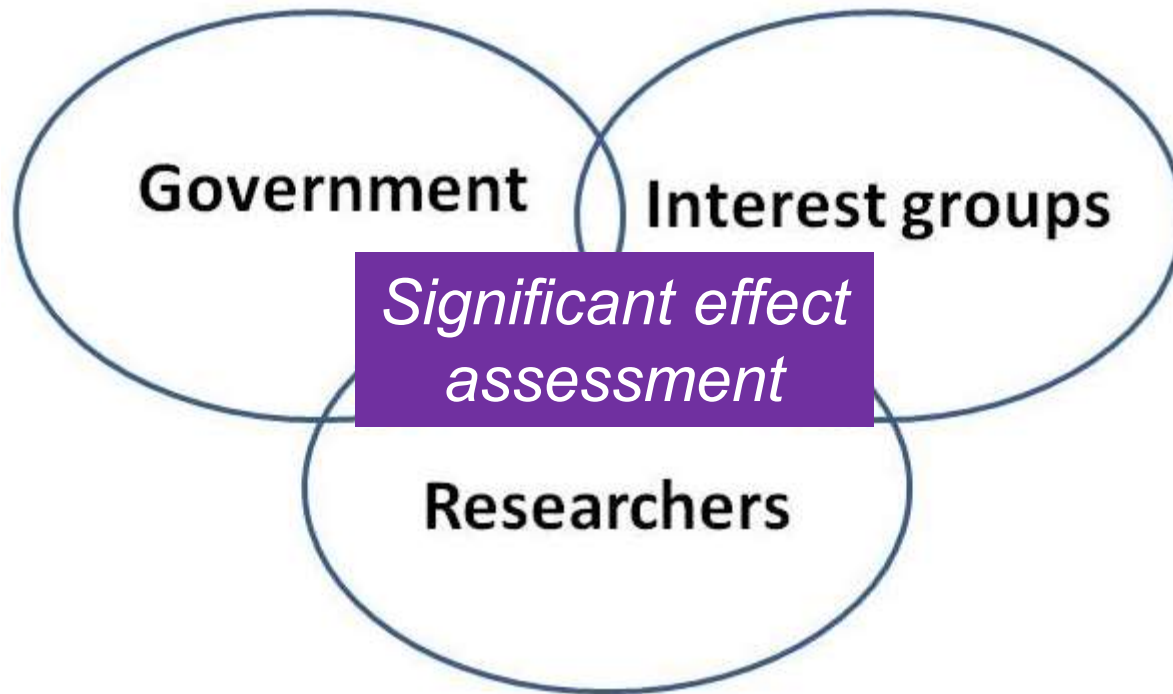
# Science-policy boundaries

---



# Boundary object

---



# Discourse coalitions

---



Policy domain



Science domain



Policy domain



Science domain





# Knowledge uncertainties

---

Authorities should only permit an activity if “no reasonable scientific doubt remains as to the absence of such effects” (ECJ 2004, paragraph 61)

## Not knowing enough

Incomplete  
knowledge

Unpredictability

## Knowing differently

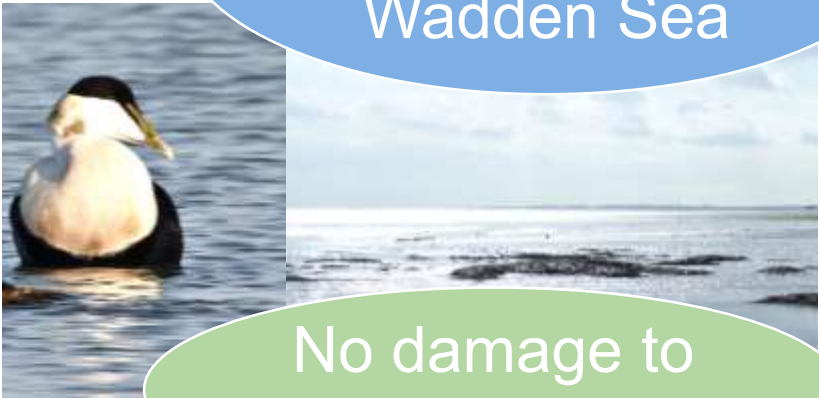
Ambiguity

# Spring 2006: permit for mussel seed fishery

## Mussel seed fishery



Mussel fishery belongs in the Wadden Sea



No damage to the seabed

### No significant effect

Uncertainty of incomplete knowledge is addressed through monitoring

### Possible significant effect

Uncertainty of incomplete knowledge on seabed effects  
Ambiguity on long-term effect



# Ambiguity on cumulative effects

## Mussel seed fishery



Mussel fishery belongs in the Wadden Sea



No damage to the seabed

**Positive cumulative effect:**

Increase of mussel biomass in combination with mussel plots

**Ambiguity on this assumption:**

Without fishery potentially more mussels



# Ambiguity on cumulative effects

## Mussel seed fishery



Mussel fishery  
belongs in the  
Wadden Sea



No damage to  
the seabed

**No cumulative effects:**  
Assessed for shrimp  
fishery

**Possible cumulative  
effects:**  
For eider ducks, effects of  
Ensis fishery

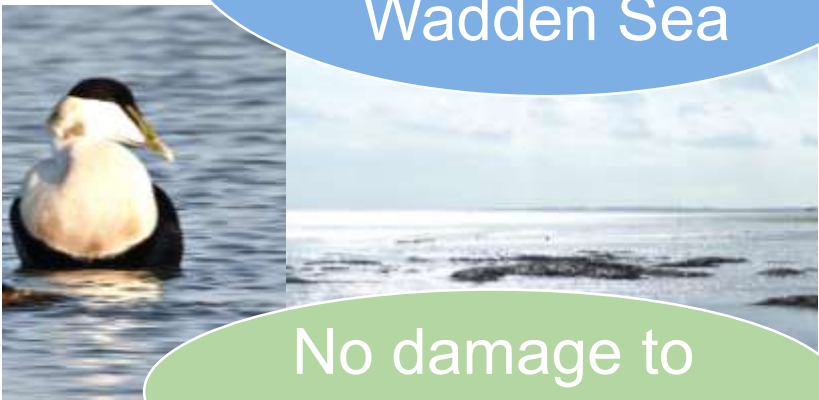


# 2008 Raad van State ruling

## Mussel seed fishery



Mussel fishery belongs in the Wadden Sea



No damage to the seabed

**Permit invalid**

Inadequate understanding of effects to assess no significant effect without reasonable scientific doubt



Supreme court of Justice



# A powerboat race in 2011

## Powerboat race

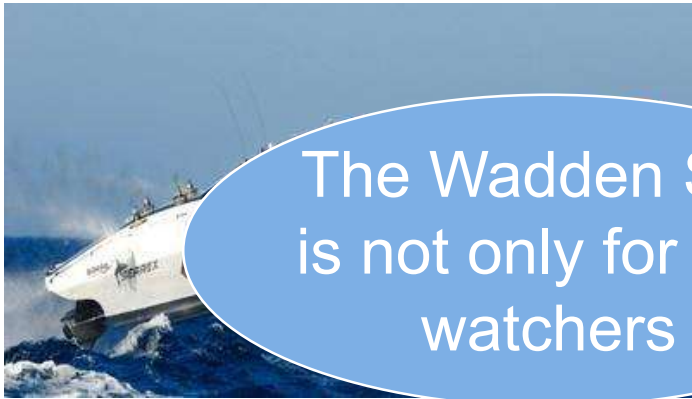


**Permit authority:**  
Appropriate assessment  
insufficient, lack of data  
and ambiguity on small  
effects

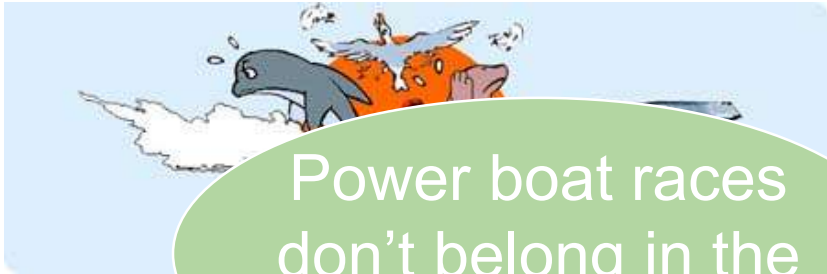


# Permit for a powerboat race in 2011

## Powerboat race



The Wadden Sea is not only for bird watchers



Power boat races don't belong in the Wadden Sea

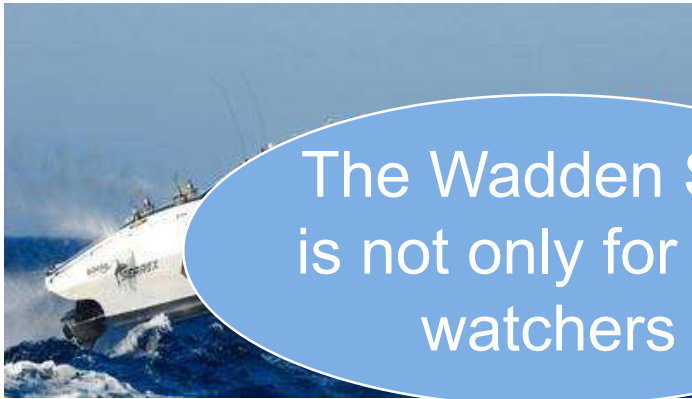
**No significant effect**  
Uncertainty of incomplete knowledge is addressed through monitoring

**Possible significant effect**  
Uncertainty of incomplete knowledge of underwater noise and ambiguity on cumulation of effects



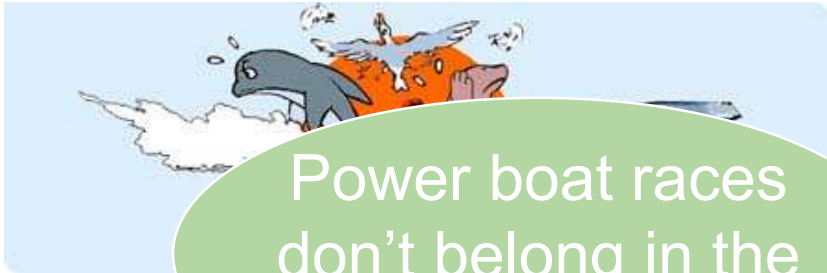
# Ambiguity on cumulative effects

## Powerboat race



The Wadden Sea is not only for bird watchers

**No cumulative effects:**  
Compared to 45.000 ship movements/year negligible



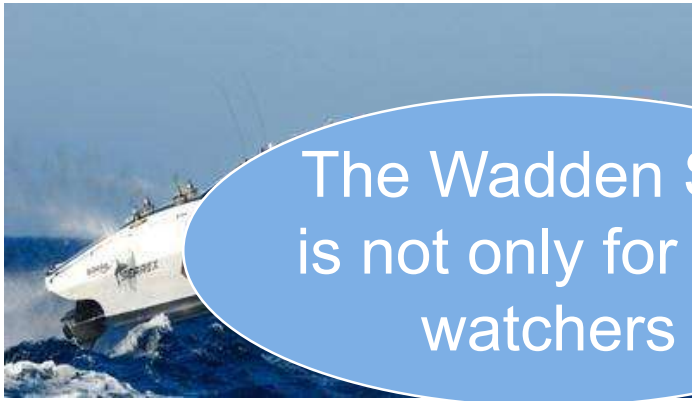
Power boat races don't belong in the Wadden Sea

**Possible cumulative effects:**  
Incomplete knowledge of effects current use



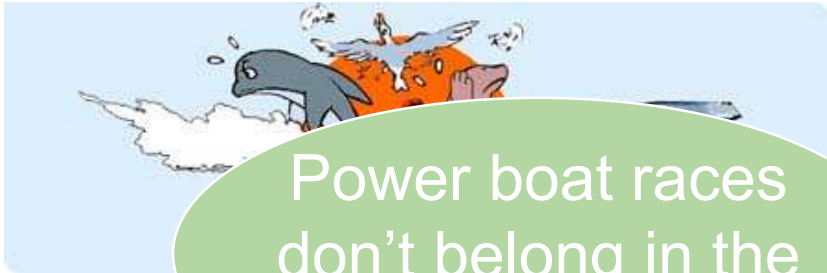
# Ambiguity on cumulative effects

## Powerboat race



The Wadden Sea is not only for bird watchers

**No cumulative effects:**  
Assessed for sailing event

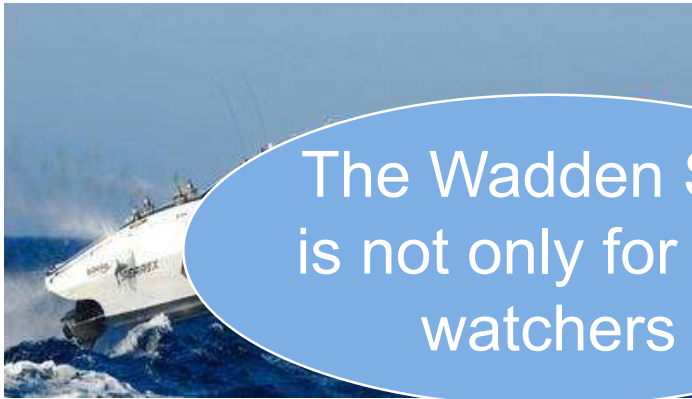


Power boat races don't belong in the Wadden Sea

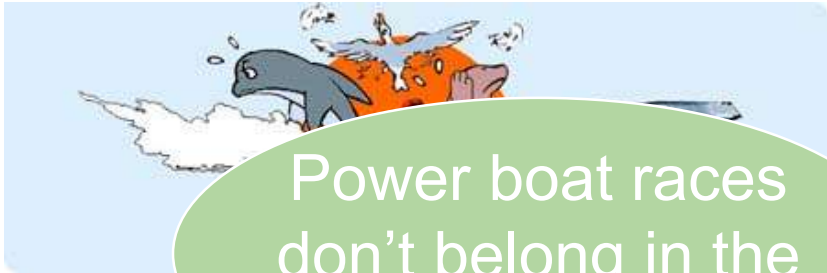
**Possible cumulative effects:**  
More activities with potential cumulative effects

# Raad van State ruling

## Powerboat race



The Wadden Sea is not only for bird watchers



Power boat races don't belong in the Wadden Sea

**Permit valid**

Preliminary decision: no objective information that the assessment is incorrect

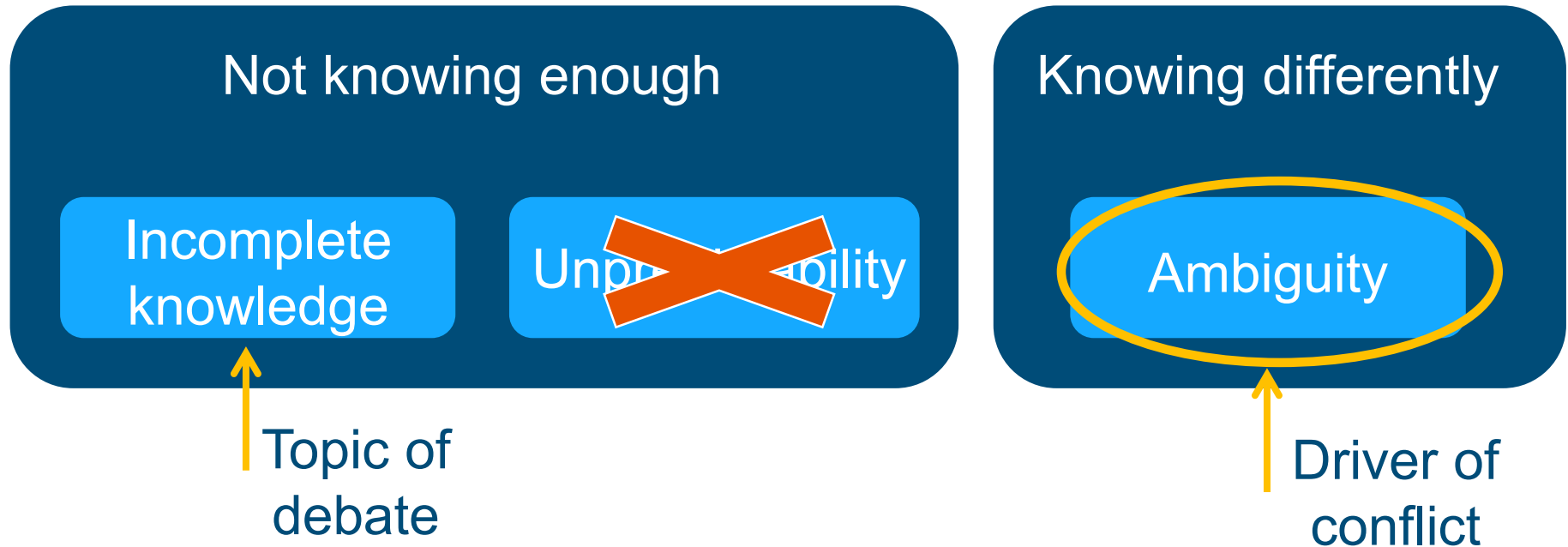


# Conclusions on the science-policy boundary

---

- Dominance of science-based experts to assess significant effect
  - Clear demarcation of role experts through contract research (problem of independency)
- Shared responsibility to make the judgement of significance
  - In mussel case: claimed by permit authority
  - In powerboat case: pushed towards science-based experts

# Conclusion on dealing with uncertainty



- With the technocratic approach of significant effect the value differences have not disappeared, but absorbed in scientific discussions

# Political aspects of cumulative effect assessments

---

- Which potential effects are relevant?
  - Of which activities?
  - On which species and habitats?
  - Small effects negligible?
  
- Who is making these decisions?
  - Responsibilities of initiators, researchers, government and interest groups
  
- How to deal with uncertainty?
  - Incomplete knowledge, unpredictability, ambiguity
  - Precautionary principle or adaptive management?

# Thank you!

*Floor et al. (2016) Uncertainties in the assessment of “significant effect” on the Dutch Natura 2000 Wadden Sea site – The mussel seed fishery and powerboat race controversies*

judith.floor@wur.nl

