

A large flock of seabirds, likely albatrosses, is gathered around a trawl net in the ocean. The birds are densely packed around the net, which is visible as a dark, rectangular structure in the center of the image. The water is a deep blue-green color, and the sky is not visible. The birds have white heads and necks with dark brown wings and backs. Some birds are swimming, while others are perched on the net or flying. The overall scene depicts a significant interaction between the birds and the fishing gear.

Mitigating Seabird Interactions with Trawl Nets

Objectives

- **Characterise the nature and extent of interactions of seabirds attracted to trawl nets (*NIWA Report 2008*)**
- **Identify ways to avoid or reduce these interactions (*Workshop 6 May 2008*)**
- **Trial methods with potential to reduce these interactions (*focus of today's presentation*)**



Trial Methods

- **Trial two methods with potential to reduce seabird net captures by reducing volume of netting on the water surface**

1. Turning the vessel while hauling

2. Net binding when shooting





Turning while hauling



Net binding



Net binding



Sea Trials Completed

- ***FV Taimania*** – Hoki Fishery Cook Strait September 2008
- ***FV Aleksandr Buryachenko*** – Jack Mackerel Fishery West Coast North Island December 2008



FV Taimania



FV Taimania



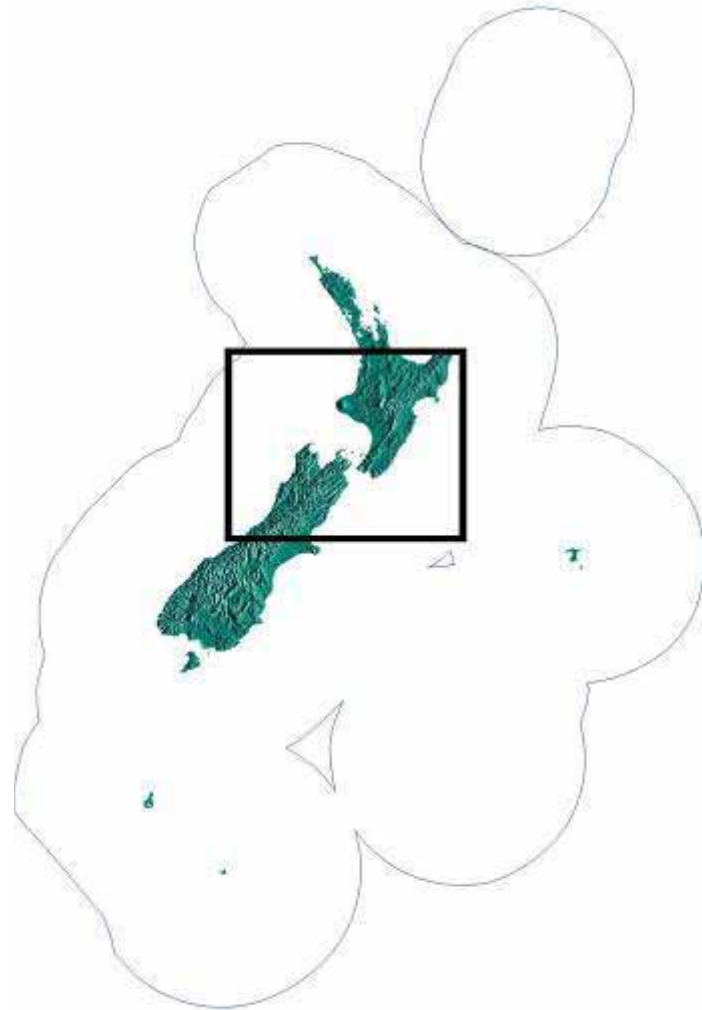
FV Aleksandr Buryachenko



FV Aleksandr Buryachenko



Trial Areas



FV A. Buryachenko
JMA7 (*Taranaki Bight*)



FV Taimania
HOK1 (*Cook Strait*)

 Fishing Grounds



Turning the Vessel

- **These vessels must turn 5° to 10° helm when hauling to get the net onto deck correctly**
- **This does close up the volume of mesh – but the turn is not continuous – the net must be hauled straight at times especially at start**
- **Couldn't complete trial on either vessel – as both must turn vessel every haul, no control treatment was possible**



FV Taimania (see video)

- **Fleeted onto net roller**



FV A Buryachenko

- **Two nets fletted on each side of deck**



Net Binding

- **Net binding can be competently and safely carried out onboard using midwater nets**
- **The ties have to have the correct holding force – different holding force for different parts of the net**
- **Could not bind head of trawl – too much force**
- **Gave up on breaking binds**



Net bind

- **Fixed twine bind with twist knot**



Net with binds being shot away



Net without binds being shot away



Show videos



Net Binding - issues

- **Need a balance between holding netting long enough vs not releasing**
- **May not release because:**
 - **Binding too tight / too many twists**
 - **Frayed rope not coming undone**



FV Taimania

- **Trawl net still closed on haul**



Frayed rope

- **The culprit**



Results of Net Binding

FV A. Taimania								
Tow #	Binding Information				Performance			
	Bind Type	Diameter	Twists in Bind	Intervals between binds (m)	Held	Loose	Let Go	Broken/Failed/Held Net Closed
3	Mussel lash	4	3	15-20	3		1	
5	Cotton	4	Tied	15	0	0		4 (all broke)
6	Mussel lash	4	3	15	4			
10	Mussel lash	4	3	15	4			
12	Mussel lash	4	3	15	3		1	Net Failed to open during tow

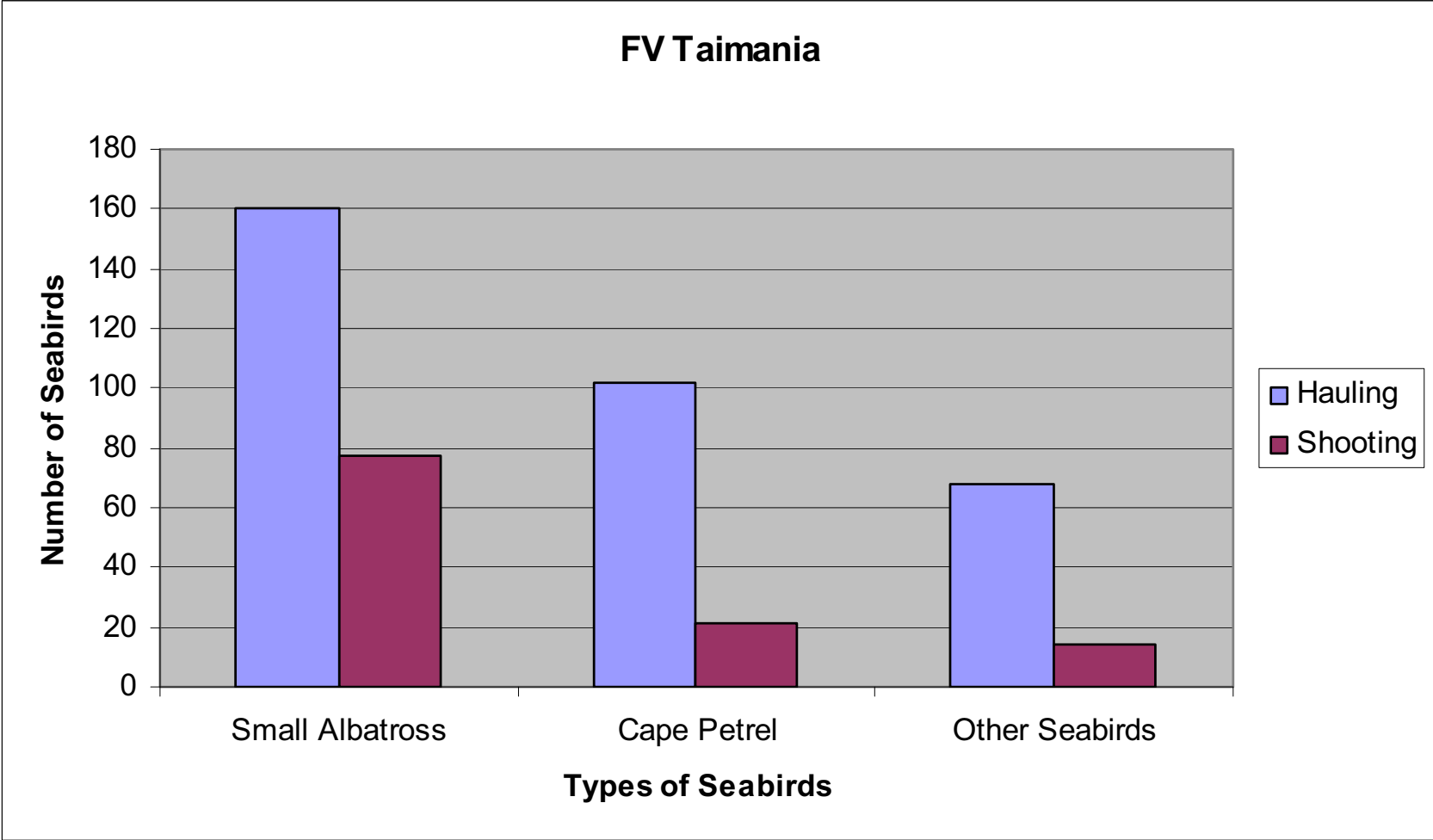
FV A. Buryachenko								
Tow #	Binding Information				Performance			
	Bind Type	Diameter	Twists in Bind	Intervals between binds (m)	Held	Loose	Let Go	Broken/Failed/Held Net Closed
4	Mussel lash	8	3	10-12	6	2		
6,10,12	Mussel lash	10	3	10	8	1	1	
13	Mussel lash	5	3	10	10			
	PPE	5	4					
16	Mussel lash	5	3	9-10	10			
	PPE	6	4					
19	Mussel lash	5	3	8-10	10	2		
	PPE	7	4					
21	Mussel lash	6	3	8-10	10	1		
	Sisal	6	4					



Bird Behaviour – *FV Taimania*



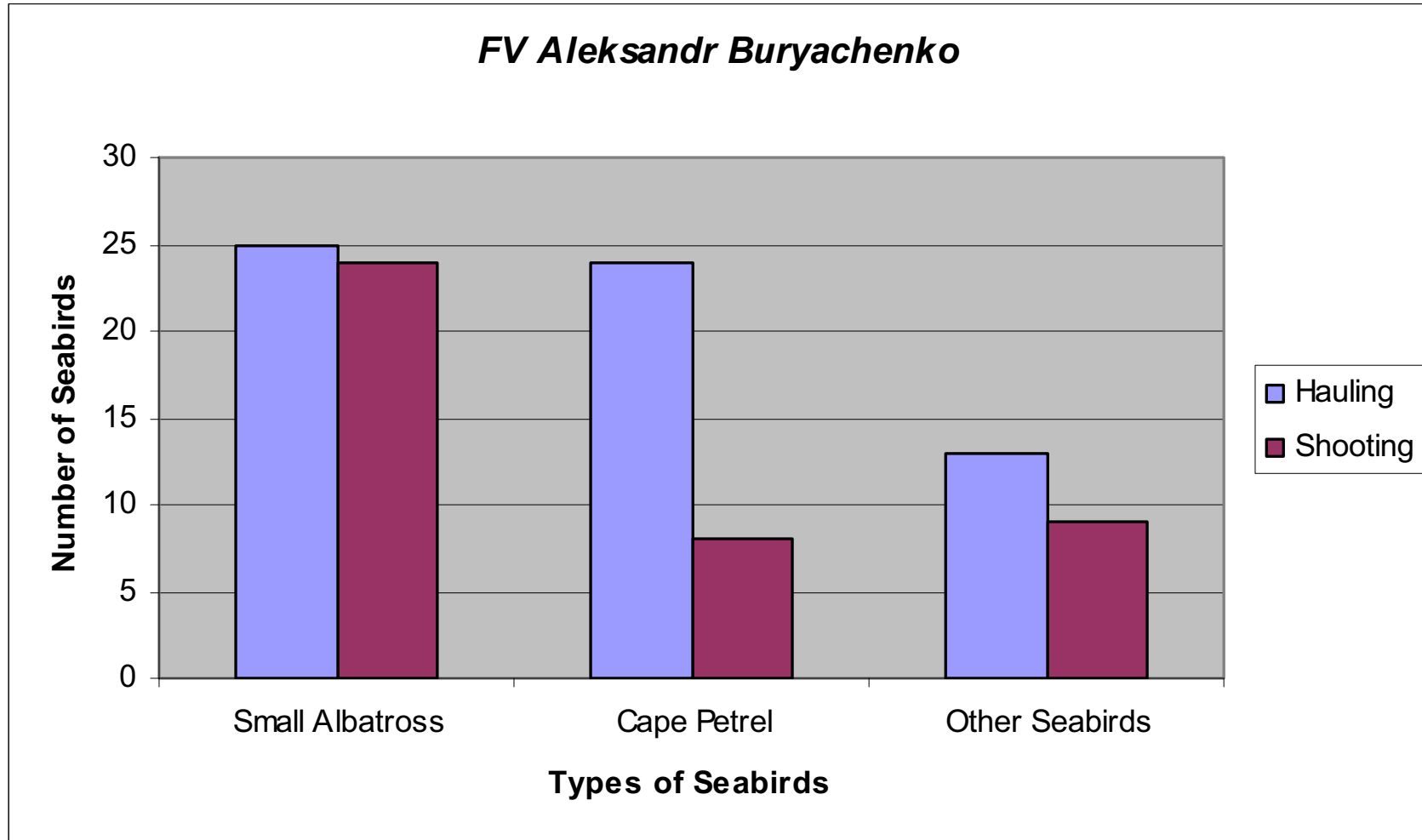
Bird Behaviour – *FV Taimania*



Bird Behaviour – *FV A Buryachenko*



Bird Behaviour – *FV A Buryachenko*



Can Turning the Vessel Reduce Seabird Captures?

- **Both vessels must turn to get net onboard**
- **The net must haul headline straight on (30% of haul time)**



Can Turning the Vessel Reduce Seabird Captures?



Can Turning the Vessel Reduce Seabird Captures?

- **Turning the vessel does reduce exposed netting on rest of trawl**



Can Net Binding Reduce Seabird Captures?

- Obviously only on shooting
- More seabirds about on hauling
- Cleaning net of stickers before shooting may be more effective
- Bottom trawls not tested
- Apparent that at times not required
- Would be good contingency measure



Can Net Binding Reduce Seabird Captures?

- **Will not stop seabirds diving into opening of net**
- **On haul**
- **Midwater head section can't be bound**
- **Bottom trawls not tested but suspect same issues**



