

FINAL REPORT (DEVELOPMENT AWARD)

AWARD CODE and TITLE

2009/315.29 FRDC People Development Program: Aquatic animal health training scheme – fish kill investigation

AWARD RECIPIENT: Dr Shane Roberts and Mr John Gilliland

ADDRESS: level 14, Grenfell St, Adelaide.

HOST ORGANISATION: WA Department Fisheries

DATE: 14 July 2014 (PowerPoint presentation submitted as report to FRDC)

ACTIVITY UNDERTAKEN

1. Attended the WA Department Fisheries fish kill training course in Perth (Western Australia) on 5 June 2014.
2. Visited the 'Fish Health Section' diagnostic laboratory, WA Dept. Fisheries, South Perth on 5 June 2014
3. Visited the WA Fisheries & Marine Research Laboratories, WA Dept Fisheries, Hilary's, Perth on 6 June 2014
4. Provided a PowerPoint presentation summarising the WA fish kill course to South Australia's PIRSA Emergency Management team and Executive.

OUTCOMES ACHIEVED TO DATE

Three PIRSA staff (two funded by FRDC) attended the WA Department Fisheries fish kill training course in June 2014. This provided valuable opportunity to up-skill staff, strengthen relationships with WA fish kill investigators and gain knowledge and resources to assist PIRSA in the development of an SA-based fish kill training course for regional staff.

Acknowledgments

The Western Australian Department Fisheries kindly offered a 1-day training course free of charge to PIRSA staff.

PIRSA Biosecurity SA provided additional financial support for a third PIRSA staff member (Alex Chalupa) to attend the fish kill training course in Perth, WA.

Background

The Western Australian Department Fisheries have an established fish kill training program that has provided regular training to regional staff for close to 15 years. The national fish kill protocols were originally based on the WA model. The WA fish kill course has trained over 600 regional staff, which is key to the rapid and efficient fish kill investigations that regional staff conduct. Such investigations provide for improved sample collection and site assessment. This leads to greater confidence in diagnosis and likely cause. In conjunction with pro-active media and awareness,

such a framework significantly reduces public and industry concern, consequently increasing confidence in government (see Appendix 1: WA fish kill training – PIRSA staff).

South Australia has a similar emergency response framework for fish kill investigations, which is based on the Australian system, although there is a need to develop and implement greater training for regional staff for fish kill investigations.

Need

Emergency response requires on-going training to ensure skills are maintained and updated.

There is a need for PIRSA staff to be up-skilled on fish kill investigations.

There is also a need for a fish kill training program in South Australia for regional personnel.

Objectives

1. Up-skill key PIRSA fish kill staff through attendance at a nationally recognised Western Australia Fish Kill workshop
2. Disseminate knowledge to government and industry personnel

Methods

Three PIRSA staff (2 funded by FRDC) attended the WA Department Fisheries fish kill training course in June 2014. The itinerary included the following:

1. Attended the WA Department Fisheries fish kill training course in Perth (Western Australia) on 5 June 2014.
2. Visited the 'Fish Health Section' diagnostic laboratory, WA Dept. Fisheries, South Perth on 5 June 2014
3. Visited the WA Fisheries & Marine Research Laboratories, WA Dept Fisheries, Hilary's, Perth on 6 June 2014

See Appendix 1: WA fish kill training – PIRSA staff.

Results/Discussion

Learning's from the WA fish kill course:

Fish kill are largely determined to be natural, regular, events that largely (80%) occur in inland waters with between 20-35 investigations in WA each year. This trend is similar to that of South Australian fish kill investigations, although in some cases the cause cannot be attributed confidently because of the limitations with investigating fish kills in remote regional areas. In WA, where there is extensive remote coastline, this limitation has been addressed through regular training of regional staff.

While PIRSA staff had the opportunity to refresh and up-skill their expertise, we were also able to strengthen relationships with WA fish kill investigators and share

experiences, information and resources. This has provided the opportunity for South Australia to start the development of an SA based fish kill training course.

See Appendix 1: WA fish kill training – PIRSA staff.

Benefits and Adoption

This project has enhanced South Australia's aquatic biosecurity response capabilities.

Beneficiaries include:

1. the South Australian seafood industry (2010/11: \$426 M farm gate, ~\$2 Billion flow on)
2. the South Australian community (incl. recreational fishers, Fishcare volunteers, environmental groups)
3. the South Australian government
4. neighbouring coastal States (WA and Vic)

Learning's from this training opportunity will assist the South Australian government (PIRSA) to develop a fish kill training course to further improve fish kill investigations.

Rapid and effective fish kill investigations are important to detect exotic disease introductions and major pollution events as soon as possible to:

- I. enable appropriate emergency response, e.g. containment. (improved management)
- II. minimise effects on fisheries and aquaculture stock (resource sustainability),
- III. minimise environmental and socioeconomic effects and
- IV. meet Australia's international obligations for disease reporting and surveillance. This also underpins export market access and national biosecurity

Further Development

PIRSA intend to use the knowledge and skills gained for the purpose of developing a fish kill training program in South Australia.

The training will be aimed at up-skilling PIRSA staff (management, compliance and policy officers), other government departments (including EPA, DEWNR, NRM) and industry representatives (fishing and aquaculture sectors). A focus will be on regional staff that are critical to rapid response in remote regions of South Australia.

Appendix 1 “WA fish kill training – PIRSA staff” (next page)

WA fish kill training – PIRSA staff

(FRDC 2009/315.29 “people development program:
aquatic animal health training scheme”)

FISHERIES
& AQUACULTURE
PIRSA

5 June 2014

Dr Shane Roberts (PIRSA F&A)

John Gilliland (PIRSA Biosecurity SA)

Alex Chalupa (PIRSA Biosecurity SA)



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Department of **Fisheries**

PREMIUM
FOOD AND WINE FROM OUR
CLEAN
ENVIRONMENT



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Itinerary

- 5 June 2014 – WA fish kill training course
Dept. Fisheries, Victoria Park, Perth
- 5 June 2014 – Visit 'Fish Health Section' diagnostic laboratory
Dept. Fisheries, South Perth, Perth
- 6 June 2014 – Visit WA Fisheries & Marine Research Laboratories
Dept. Fisheries, Hillary's, Perth

Western Australia fish kill training course



Western Australia fish kills

- Mostly natural events (*regular events*)
e.g. algae / low oxygen
- Average 20-35 fish kills per year
- >80% occur in inland waters

Photo: WA Fisheries



WA fish kill response

- Incident Coordinator (IC)

 - Freshwater – Dept Water

 - Marine – Dept Fisheries (Fish Health Unit, fish kill coordinator)

Supporting agencies (IC):

 - Swan & Canning rivers – Swan River trust

 - Pollution events and Lakes – Dept Environment (DEC, DPAW), Dept Transport (oil spill)

 - *Clean up – local councils, public health warnings – Dept Health

- Responsibilities (draft MOU)

 - Dept Fisheries – fish analyses

 - Dept Water – water and algal analyses

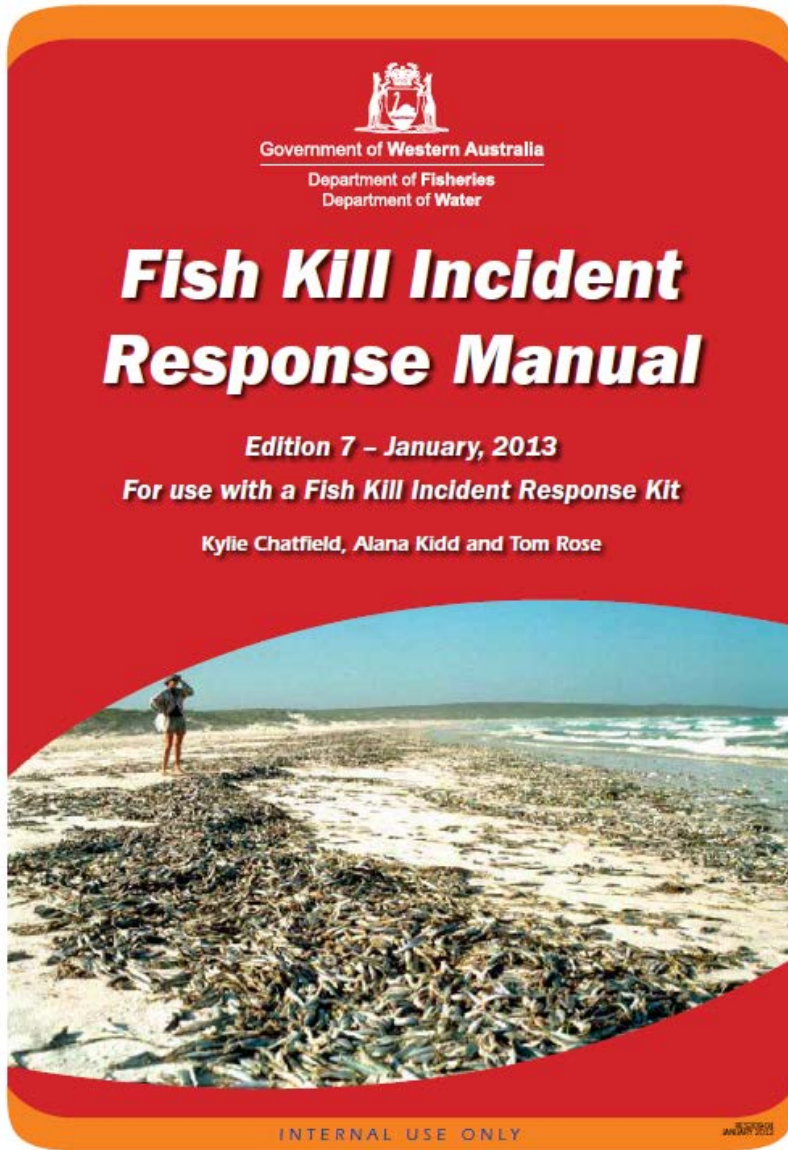
 - report weekly water quality monitoring (report poor water conditions – predictive)

WA fish kill course

- Where: Dept. Fisheries, Victoria Park, Perth
- Facilitators: Dept. Fisheries, Fish Health Laboratory
Kylie Chatfield, Dr Jo Bannister, Paul Hillier
- Target: WA regional staff
- History:
 - Initiated after pilchard kills late 90's
 - National fish kill protocol based on WA model
 - Over 600 regional officers trained
 - Significantly improved sample collection and chance of diagnosis and likely cause
 - Reduced public concern / Ministerials !

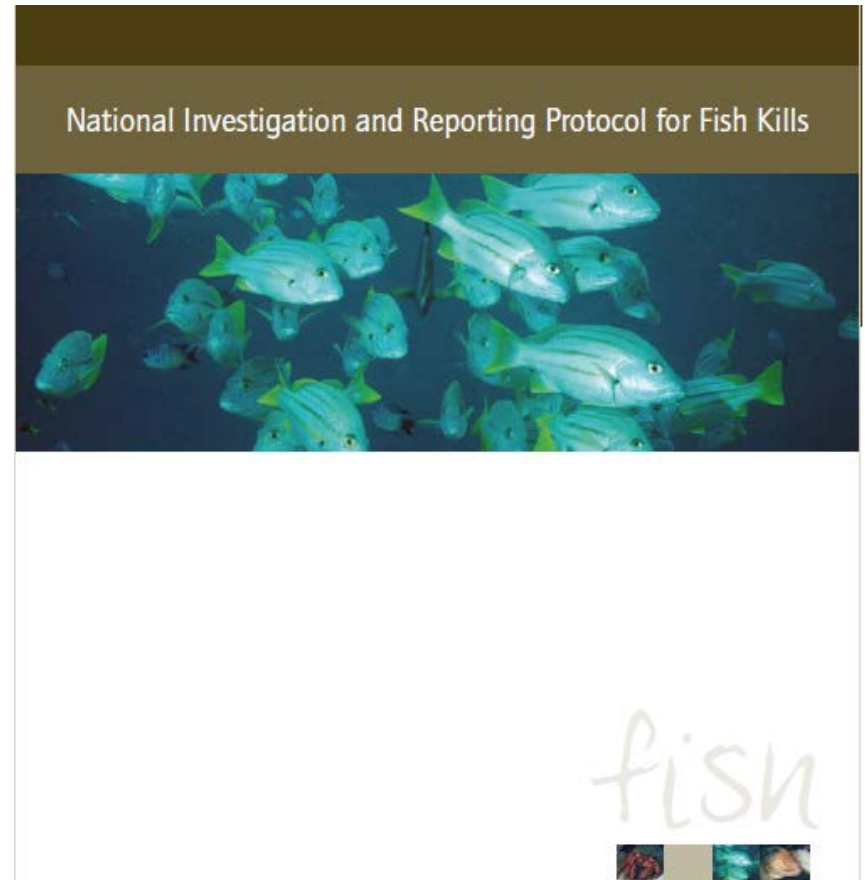


WA manual



National protocol

www.daff.gov.au



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WA fish kill course - outline

- Introduction
- Part A – receive a report (theory)
- ★• Part B – site survey (theory & prac)
estimating fish affected,
fish kill kits, fish dissection,
water & sediment collection
- Part C – post site survey (theory)
sample submission, paper work
- Scenario – discussion exercise
- Assessment



WA fish kill course – Benefits

- Over 600 WA regional officers trained
- 32 fish kill kits in regional offices (~\$1,600 each)



Photo: WA Fisheries



WA fish kill course – Benefits

- Over 600 WA regional officers trained
- 32 fish kill kits in regional offices (~\$1,600 each)
- Regional staff equipped to respond promptly and efficiently
- Prompt diagnosis and predictive capability (water monitoring programs) enables pro-active media
- Reduced human health risks (e.g. toxic algae, zoonotics)
- Improved public (and seafood industry) confidence
- ❖ Less negative media and fewer letters to Ministers



South Australia - NEED

- Seafood production (farm gate)
= \$0.5 billion (2011/12)
- Increasing demand for disease management
 - Industry – trade and market access, protect SA's high health status, climate variability
 - public – greater expectations, human health risks, climate variability, protect natural resources

2013 fish kill news article

Environment reporter Katrina Stokes - The Advertiser

April 04, 2013 12:00AM

[346 comments](#)

Many have voiced suspicions the newly opened desalination plant at Port Stanvac is to blame.

Others have suggested sea pollution, an underwater volcano or irradiated water from the Fukushima nuclear plant in Japan.



Some of the dead fish washed ashore at Moana. Picture: Andy Sintome



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SA – fish kill examples

- 1995/99 pilchard mortality
 - 2013 state-wide fish and dolphin mortality event
 - 2014 coffin bay fish and abalone kill
 - Regular (annual) fish kills including bony bream, carp, mullet, garfish, sand crabs, cockles
 - Rare events – turtles, blue marlin
- * Media and Ministerials !



SA – next steps

- Develop a fish kill training course for regional staff
commitment from Biosecurity SA, Emergency Management
- Engage other departments
EPA, SA Water, DEWNR, NRM
- Funding needed for fish kill kits in regional offices
- Regular training, public and industry awareness campaign



Acknowledgements

- Western Australian Department of Fisheries

- Dr Jo Bannister
- Kylie Chatfield
- Paul Hillier
- Dr Mike Snow



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