



Shire of Denmark

Shark Hazard & Beached Whale Policy



3 December 2013 - Attachment 8.2.3 a

CONTENTS

- 1. Aims and Format of this Plan..... 3**
- 1.1. Definitions 3
- 1.2. Acronyms 3
- 2. Shire of Denmark Policy Statement 4**
- 3. Reported Sightings 4**
- 3.1. Reported Sightings – Response Summary 5
- 3.2. Media Response to Sightings 6
- 3.2.1. When to issue a media release 6
- 4. Roles and Responsibilities..... 7**
- 4.1. Role of Denmark Shire Staff 7
- 4.1.1. CEO / DCRS 7
- 4.1.2. Operations Manager..... 7
- 4.1.3. Media Liaison Officer..... 7
- 4.1.4. Research Representative 8
- 4.1.6. Field Officers 8
- 4.2. Role of other Organisations and Departments 8
- 4.2.1. The WA Police..... 8
- 4.2.2. Surf Life Saving WA and Volunteer Management Groups..... 8
- 5. OPERATIONAL PROCEDURES 9**
- 5.1. DoF Field Operations 9
- 5.2. Media Communications..... 9
- 5.3. Public relations..... 10
- 5.4. Operational Communications..... 10
- 5.5. Monitoring Network Research Project..... 10
- 5.6. Precautionary Warnings at Bar Openings 10
- 6. SCHEDULE 1: TELEPHONE CONTACTS11**
- 6.1. Key Contacts..... 11
- 6.2. Agencies and Organisations - Key Contacts..... 12
- 7. SCHEDULE 2: OPERATIONAL ASSESMENT RUNNING SHEET14**
- 7. SCHEDULE 3: Response Flow Charts15**
- 6.1. Shark Sighting Flow Chart 15
- 6.1. Shark Attack Flow Chart 16
- 6.2. Beached Whale..... 17

1. Aims and Format of this Plan

This document is designed to guide officers of the Denmark Shire in effectively and efficiently responding to shark sightings and incidents in the Shire of Denmark, both in terms of operations and the response to the media and the general public.

It contains details of Roles and Responsibilities, Operational Procedures and Contact Lists that are relevant to a Shark Hazard and Whale Beaching response in the Shire of Denmark.

Council's primary interest in formulating this policy is to as a responsible manager of high usage recreational beaches and to provide guidance to its staff in responding to shark reports at these locations.

This plan however does not seek to manage shark sightings in non recreational beach areas such as reefs and the like as it is given that sharks will be seen in these areas on a regular basis. Where these sighting are reported they will be recorded in Council's shark sighting register.

This plan also includes a flow chart for responding to beached whales as many of these considerations parallel.

1.1. Definitions

Sighting	Reported sightings of a shark, confirmed or unconfirmed.
Interaction	When a shark has interacted with a person or boat but has not attacked. (e.g., shark has nudged a boat).
Attack	When a shark attacks a person causing physical injury.
Incident	An interaction or attack that is endangering human life.
Serious Incident	A fatal attack by a shark on a person or an attack that is of such a serious nature that it is likely that the person may die.
High usage recreational beaches	High usage recreational beaches are those locations (and seasons) where there is a high likelihood that during daylight hours one could reasonably expect to see someone swimming or surfing at that location. Examples of high usage recreational beaches are Ocean Beach, Prawn Rock Channel, Lights Beach, Back Beach, Parry Beach near the camping ground, Peaceful Bay near Leasehold settlement and Boat Harbour.

1.2. Acronyms

CEO	Chief Executive Officer, Shire of Denmark
DCRS	Director Community & Regulatory Services, Shire of Denmark
DoF	Department of Fisheries Western Australia
DOT	Department of Transport
DPaW	Department of Parks and Wildlife
LGA	Local Government Authority (may include neighbouring LGA's)
OIC	Officer in Charge/ Operations Manager/ Senior Ranger (Shire of Denmark)
SLSWA	Surf Life Saving Western Australia

WPCC
DFES
FO
WAPOL
HMA

Water Police Communications Centre
Department of Fire and Emergency Services
Field Officer/ Duty Ranger (Shire of Denmark)
WA Police
Hazard Management Agency

2. Shire of Denmark Policy Statement

Sharks are a highly successful and diverse group of fish, which have evolved over 400 million years to inhabit nearly all aquatic environments on earth. Most species are either small, un-aggressive or inhabit waters where they are unlikely to encounter humans and only a handful of the over 350 extant species pose a potential threat to human life.

Western Australia is within the geographical range of most species that are considered to be potentially dangerous and the procedures outlined in the Denmark Shire Shark Hazard Response Plan are a necessary and responsible contingency.

Three potentially dangerous shark species occur in southern Western Australia. These are the tiger shark, *Galeocerdo cuvier*, the bull shark *Carcharhinus leucas*, and the great white shark, *Carcharodon carcharias*. The great white shark is recognised as vulnerable by the World Conservation Union (IUCN) Redlist and the Australian Society for Fish Biology. This designation denotes a species, which faces a high risk of extinction in the wild in the medium-term future. The Department of Fisheries (DoF) and the Commonwealth Government have afforded this species a totally protected status due to the very real concerns that the survival of the species in Australian waters is uncertain. Given the conservation status of this species, where a great white shark is considered to be a threat under the extent of this plan, it is intended that every attempt will be made to mitigate the threat without causing harm to the shark.

Although the risk of shark attack exists any time people enter the ocean, the risk is extremely small, with less than one fatal shark attack per year nationwide. Sharks do not generally target humans as prey and scientific studies suggest that victims are mistaken for more usual prey species such as seals, sea lions and turtles. There is no evidence that individual great white sharks are involved in multiple attacks on humans, however there are some locations related to their normal prey where great white sharks regularly occur e.g. seal colonies.

In reading and actioning this policy it should be noted that Water Police (WPCC) and the Department of Fisheries (DoF) are the agencies with responsibility for responding to shark sightings and coordinating responses to problem sharks and Surf Life Saving Australia are the primary advice agency in terms of beach safety and management.

Council interest in this matter is as a responsible manager of high usage recreational beaches to provide guidance to its staff in responding to shark reports at those locations.

It should be further noted that the arrangements in the policy are intended to mirror those of the DoF "Shark Hazard Response Plan Regional Response" and where an inconsistency is encountered between the documents the DoF plan takes precedence.

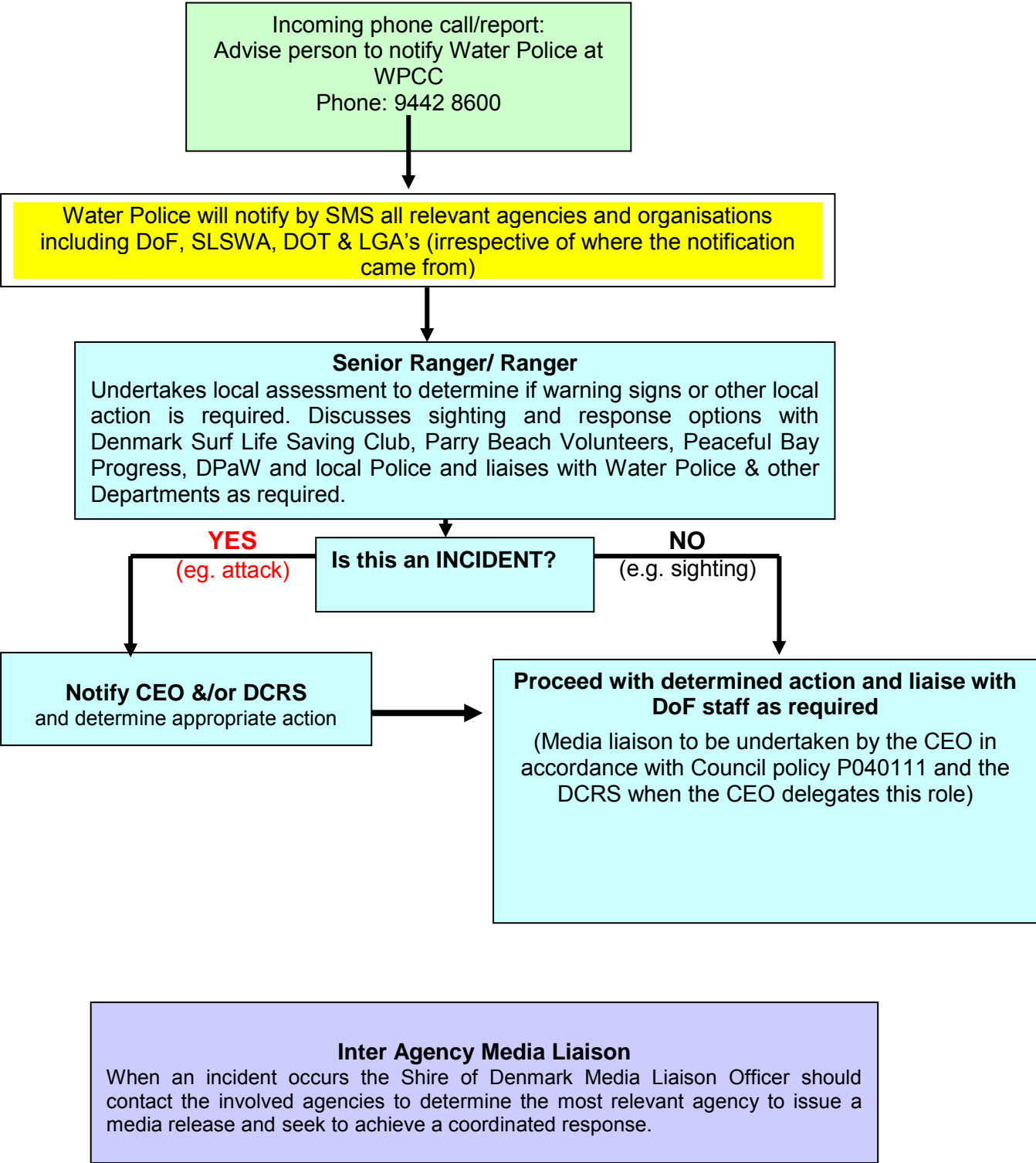
3. Reported Sightings

Water Police are to be notified of all sightings by calling the WPCC on 9442 8600

The WPCC is the central point of contact for all sightings and incidents and is always staffed. When a shark sighting or report has been received at the WPCC, it is disseminated by SMS to relevant people, including the operational staff responsible for actions under this plan and the Media Liaison Officer.

When reports of shark sightings are received from the public by Denmark Shire officers, the officer concerned should advise the person to contact the WPCC directly, on 9442 8600.

3.1. Reported Sightings – Response Summary



3.2. Media Response to Sightings

As per the Denmark Shire Media Policy **P040111** “the staff member will direct the enquiry to the Chief Executive Officer who will, where appropriate and practical, liaise with the Shire President to determine who will respond/comment and the nature of the response/comment.”

The CEO is ‘Media Liaison Officer’ for the purposes of this document unless this role is delegated to the DCRS.

ALL media queries, releases and statements related to shark sightings and incidents must be referred to the CEO unless this role of “**Media Liaison Officer**” is delegated to the DCRS.

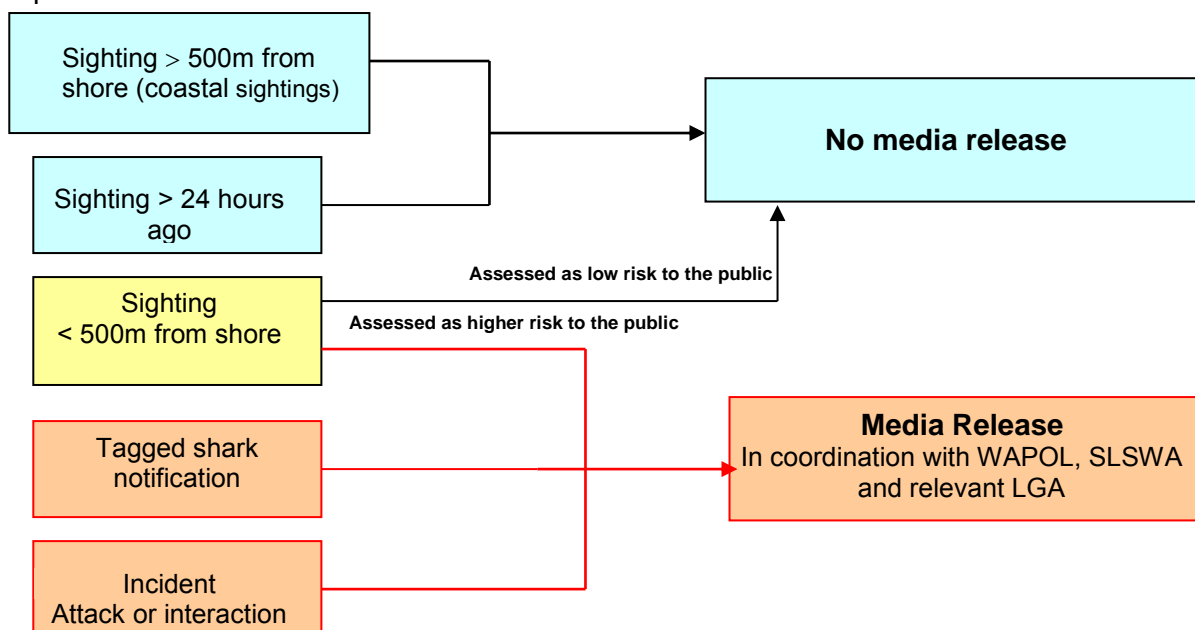
Staff that are approached directly by the Media must refer calls to the Media Liaison Officer, unless previous arrangements have been made. This will help to reduce the time that staff spend in dealing with general media queries and ensure consistency and of the information being released. The Media Liaison Officer may contact DoF Research Staff to assist with media and PR material.

The focus of Denmark Shire media releases should be in relation to recent shark sightings, shark biology and technical information/expertise. Where it is practical to do so media statements will be developed by the Media Liaison Officer in liaison with the Senior Ranger/ Ranger and in consultation with the WAPOL, SLSWA.

Media releases will be issued by the most relevant agency, depending on the specific circumstances of the sighting/incident. In the event of a serious incident, guidance must be sought from the WAPOL as to what information can be released in media statements.

3.2.1. When to issue a media release

The following is a **guide** to shark sighting related media releases initiated by Denmark Shire. Staff should assess each sighting or interaction on a case-by-case basis and take actions according to the potential threat to human life.



The Operations Manager/ Senior Ranger will deal with sightings in rivers or estuaries on a case-by-case basis, taking into account the information to hand and the potential threat to human life.

4. Roles and Responsibilities

4.1. Role of Denmark Shire Staff

4.1.1. CEO / DCRS

Role:

Holds ultimate responsibility for the organisational response to a shark incident.

Responsibilities:

- Liaise with the Operations Manager to determine the appropriate response to an incident; and
- Approve Shire Response Statement and all Denmark Shire, joint or Ministerial media releases.
- Media Liaison unless this role is delegated to the DCRS.

4.1.2. Operations Manager/ Senior Ranger

Role:

Coordinates and manages the Shire's field components of the response to an incident.

Responsibilities:

- Undertake an operational assessment of all sightings;
- Advise the CEO and/or DCRS immediately if a serious incident or an attack occurs;
- Liaise with the CEO and/or DCRS to determine Departmental response to an incident;
- Advise Media Liaison Officer if a media release is required;
- Obtain approvals from CEO / DCRS as required;
- Liaise with WAPOL, SLSWA, DoF and relevant community groups and LGAs on operational responses;
- Liaise with Media Liaison Officer and DoF Research Staff as required;
- Delegate tasks and ensure tasks are completed according to required time frames;
- In consultation with the Media Liaison Officer, identify all other groups and agencies with a role in the response and establish communication links;
- Provide regular updates to CEO & DCRS, Media Liaison Officer, DoF Staff; and
- Document the response to a sighting/incident on the operational assessment/running sheet.

4.1.3. Media Liaison Officer

Role:

Coordinates public and media responses to sightings and incidents and is the main contact point for all external communications.

Responsibilities:

- Notify WPCC on 9442 8600 of any new sightings;
- Liaise with Operations Manager/ Senior Ranger, DoF Research Staff and external agencies as required;
- Develop and distribute a media release if instructed to do so by the Operations Manager/ Senior Ranger;
- Establish communication links with all involved organisations or agencies;
- Liaise with WAPOL, SLSWA and other relevant parties on media releases;
- Develop and update as required, a Response Statement which will be used consistently to ensure a uniform message is delivered to all parties;
- Obtain approval from the CEO for statements and media releases, including Ministerial media releases;
- Consider informing operational people who are close to the media of the current media position;
- Conduct factual interviews/radio bulletin updates; and
- Liaise with Operations Manager/ Senior Ranger to provide regular updates to DoF and other relevant agencies.

4.1.4. Research Representative

Role:

Provides scientific and research advice. The Shire of Denmark does not employ its own carcharias (shark) specialists and relies on DoF & DPaW staff to perform that function where it is required.

Responsibilities:

- To provide technical support to the Media Liaison Officer and Operations Manager/ Senior Ranger.
- Talk to media, undertake interviews and answer media queries about the incident on behalf of their respective agencies; and
- Advise on data and sample collection if required.

4.1.5. Field Officers/ Duty Ranger

Role:

Provides assistance during sightings and incidents, under the direction of the Operations Manager/ Senior Ranger.

Responsibilities

- Advise WPCC on 9442 8600 immediately upon any sighting;
- Undertake duties as designated by the Operations Manager/ Senior Ranger; and
- Erect warning signs when required.

4.2. Role of other Organisations and Departments

4.2.1. The WA Police

The WA Police (WAPOL) is the Hazard Management Authority (HMA) for sea search and rescue (SAR) in Western Australia. The Water Police has a function at the WPCC to receive calls and coordinate SAR.

SAR operations are undertaken in conjunction with DFES Sea Rescue Volunteers, DOT, SLSWA and LGAs/RIA. As shark sightings and incidents are not recognised under the State Emergency Management arrangements, there is no formal HMA. The Water Police are the only agency mentioned in this plan to have a dedicated emergency coordination centre that is staffed around the clock. It is the central point of contact for all shark sightings and incidents.

In all incidents, the WPCC will act as the first point of call and initiate the first response. If the incident escalates to a serious incident, the WA Police will act as the lead agency relative to their responsibilities pursuant to the Coroner's Act.

If any measures that are taken in response to a sighting or attack, it is important to ensure that those involved, acknowledge the protected status of the great white shark (see DoF Policy Statement).

4.2.2. Surf Life Saving WA and Volunteer Management Groups.

SLSWA has state wide standard operating procedures for shark sightings, including guidelines on when to clear the water and close a beach and how long a beach should remain closed.

On patrolled beaches where SLSWA volunteers and LGA paid life guards are responsible for beach patrols and beach safety and they will sound beach alarms, clear the water and close beaches if required following a shark sighting or incident.

On beaches that are not patrolled Council's Senior Ranger will in consultation with any agencies or groups that manage that beach assess the risk in accordance with this policy and make a decision as to whether the beach should be closed.

In the event of a closure standardised signs shark sightings closure will be deployed and they will be erected by the agency that has control or that beach and the of default by that agency Council's Senior Ranger.

A stock of additional closure signs is held in the DCRS office.

It is important that the Denmark SLSC, Parry Beach Management Group and the Peaceful Bay Progress Association and the DPaW, Walpole Branch are notified of reports of shark sightings and eminent closure of recreational beaches in their respective areas.

5. OPERATIONAL PROCEDURES

5.1. Denmark Shire Field Operations

In the event of a sighting, the Operations Manager/ Senior Ranger or their delegate will undertake an operational assessment and decide whether a media release or an operational response is required.

In the event of an incident (such as an attack) the Operations Manager/ Senior Ranger will liaise with the DCRS and CEO to determine the appropriate action and will ask the Media Liaison Officer to develop and issue a media release if required.

The Operations Manager/ Senior Ranger will coordinate the Denmark Shire field response and liaise closely with WAPOL, SLSWA, LGAs and relevant DoF staff (eg Research staff) as required.

The Operations Manager/ Senior Ranger shall keep relevant Shire staff updated regarding the incident or delegate the responsibility to the Media Liaison Officer.

The Operations Manager/ Senior Ranger will document the operational assessment of each sighting and details of any response on the Shark Sighting/Incident Operational Assessment/Running Sheet at.

5.2. Media Communications

The Media Liaison Officer, will in consultation with the Operations Manager/ Senior Ranger, be responsible for handling the Denmark Shire's responses to the media and general public and will develop media releases when instructed to do so by either the CEO or the Operations Manager.

Following an incident, the Operations Manager/ Senior Ranger will make formal contact with the WA Police, SLSWA and the relevant local coastal volunteer groups and develop a communication link.

The Media Liaison Officer will prepare media releases in consultation with the Water Police, SLSWA and/or DPaW as required. All Denmark Shire media releases will be approved by the CEO and will be given priority over other work.

The Operations Manager and other field personnel who are close to the media should seek instruction from the Media Liaison Officer regarding their response to media interactions.

A designated Media Spokesperson will be appointed to talk to media about the incident, undertake interviews and answer media queries. The CEO may also act as an additional spokesperson if required.

The Operations Manager should ensure that no media are given access to DoF, Water Police or Sea Rescue patrol boats.

5.3. Public relations

A shark incident may generate community interest and a large number of telephone calls from members of the public wishing to express their opinion or make general enquiries.

The Operations Manager/ Senior Ranger, in coordination with the Media Liaison Officer, should ensure that a plan to deal with calls is determined and implemented in line with the following procedures:

- Prepare a standard response to be used by all persons dealing with public enquiries, including the Denmark Shire Administration Reception staff.
- Brief Denmark Shire Reception on the incident and instruct them on what to say.
- Ensure that a Media Statement about the incident has been posted on the Denmark Shire website.
- If required, establish a Shark Information Line.
- Make a decision in accordance with decision tree number 3.1 as to whether signage is required.

5.4. Operational Communications

In the event of a sustained sightings or an incident all communications are to be coordinated through the WPCC.

Denmark Shire Rangers vehicles are able to communicate with the Police during normal office hours radio via WAERN VHF (marine) radio, 98480500 or 000.

Operational staff are to communicate with the WPCC on 9442 8600.

Denmark SLSC via their president George Mumford on 9848 1202, AH 9848 1098
0432 955 436, www.denmarksurf.com.au , mumfg@wn.com.au

SLSWA Surf-Comm can be contacted as a backup on a 24 hour 7 day a week service on 13 7873

In the event that the SLSWA helicopter is deployed to Denmark it will log on with the WPCC at the beginning of each flight, and log off at the conclusion of each flight.

5.5. Operational Communications

In the event of a sustained sightings or an incident all communications are to be coordinated through the WPCC.

5.6. Precautionary Warnings at Bar Openings

The Media Liaison Officer will prepare and issue a precautionary warning media statement advising that bull and bronze whaler sharks may be attracted to saline exchange zones during estuary bar openings immediately prior to the occurrence of these openings.

6. SCHEDULE 1: TELEPHONE CONTACTS

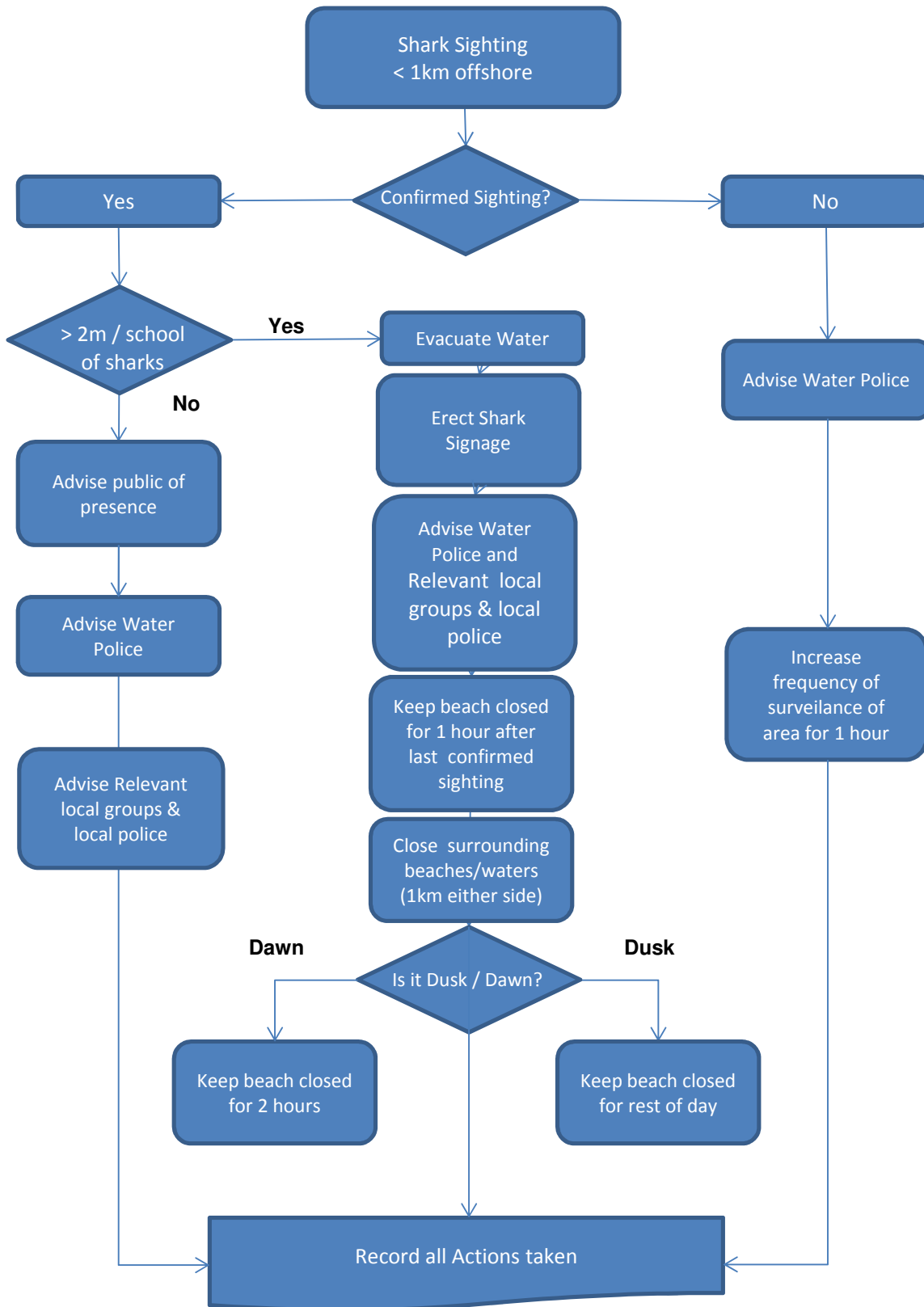
6.1. Denmark Shire – Key Contacts

Response Role	Position	Identity	Contact Details
Denmark Shire Management & Media Liaison Officer	Chief Executive Officer (CEO)	Mr Dale Stewart	Office 98480300
	Director of Community & Regulatory Services	Mr Gregg Harwood	Office 98480300 Mob. 0419 949 733
Operations Manager	Senior Ranger	Charmaine Shelley	0488 909 650
Operational Staff/ Field Officer	Duty Ranger	Dave Lonie	0429 482 244

6.2. Agencies and Organisations - Key Contacts

Agency	Position	Identity	Email	Phone	Fax
Shark Hazard Committee	Chair	Mr Bruno Mezzatesta	Bruno.Mezzatesta@fish.wa.gov.au	Office 9482 7339 Mob. 0413 132 782	9482 7214
	Executive Support Officer	Ms Barbara Sheridan	Barbara.Sheridan@fish.wa.gov.au	Office 9432 8046	9432 8060
Western Australian Police WAPOL	Water Police Coordination Centre	Ops Manager OIC Co ord Centre	water.police.fremantle@police.wa.gov.au	9442 8600 9442 8601 9442 8606	9442 8615
Denmark Police	Local Police & Water Police Support	Sgnt Andrew Dunn	denmark.police.station@police.wa.gov.au	98480500	
Walpole Police	Local Police & Water Police Support	Sgnt Cameron Clifford	walpole.police.station@police.wa.gov.au	98401618	
Surf Life Saving WA	Beach Services Coordinator	Mr Chris Peck	cpeck@mybeach.com.au	Office 9244 1222 Mob. 0403 240 775	9244 1225
		Mr Matthew Du Plessis	mduplessis@mybeach.com.au	Office 9244 1222 Mob. 0403 240 777	
Denmark Surf Life Saving Club	Local Surf Club & Ocean Beach Life Guards	Club President, George Mumford	mumfg@wn.com.au	9848 1202 A/H 9848 1098 0432 955 436	
Peaceful Bay Progress Association	Peaceful Bay management group	Progress Secretary Callum Baxter	secretary@peacefulbayprogress.org.au	9840 9553 Mob: 0409 446 993	
Parry Beach Management Group	Parry Beach Caretaker	Varies	parrysbeach@gmail.com	9840 8321 0427850770	
Dept. of Fisheries	Manager Metropolitan Region	Mr Tony Cappelluti	Tony.Cappelluti@fish.wa.gov.au	Office 9432 8006 Mob. 0409 206 850	9432 8060
	Media Liaison	Mr Ashley Malone	Ashley.Malone@fish.wa.gov.au	Office 9203 0357 Mob. 0418 901 767	9203 0399
DPaW	Chief Wildlife Officer	Mr Dave Mell	David.Mell@dec.wa.gov.au	Office. 9334 0429 Mob. 0419 938 752	9334 0295
	Supervising Wildlife Officer	Mr Doug Coughran	Douglas.Coughran@dec.wa.gov.au	Office. 9334 0339 Mob. 0419 947 708	
DPaW Walpole	Local DPaW, major coastal land holder & wildlife experts	Alison Donovan	alison.donavan@dec.wa.gov.au	98400400	98401251

Shark Sighting Flow Chart

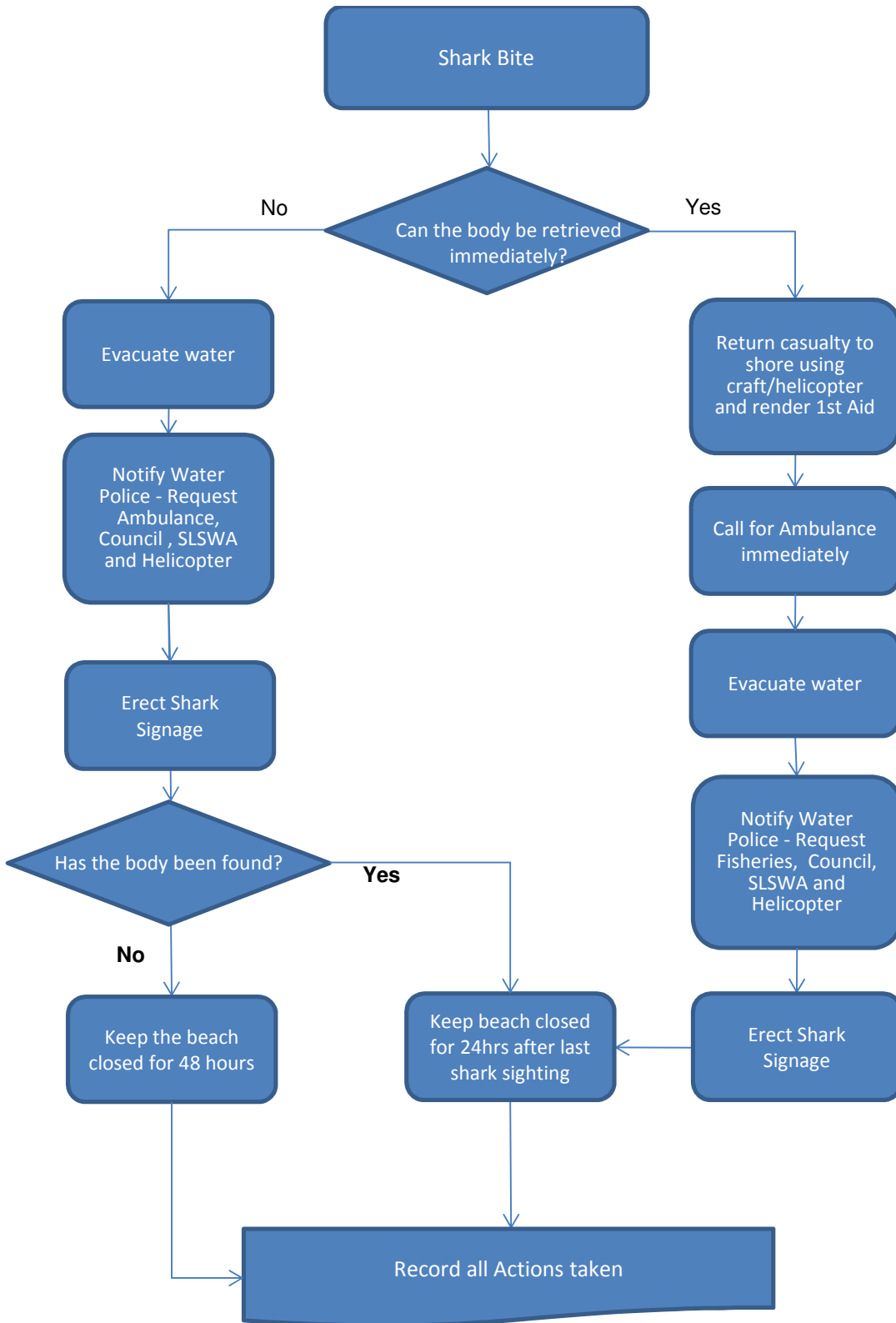


Do Not:

- Launch Craft to find or chase shark
- Place yourself in unnecessary danger
- Give conflicting statements to Fisheries / Media



Shark Bite Flow Chart

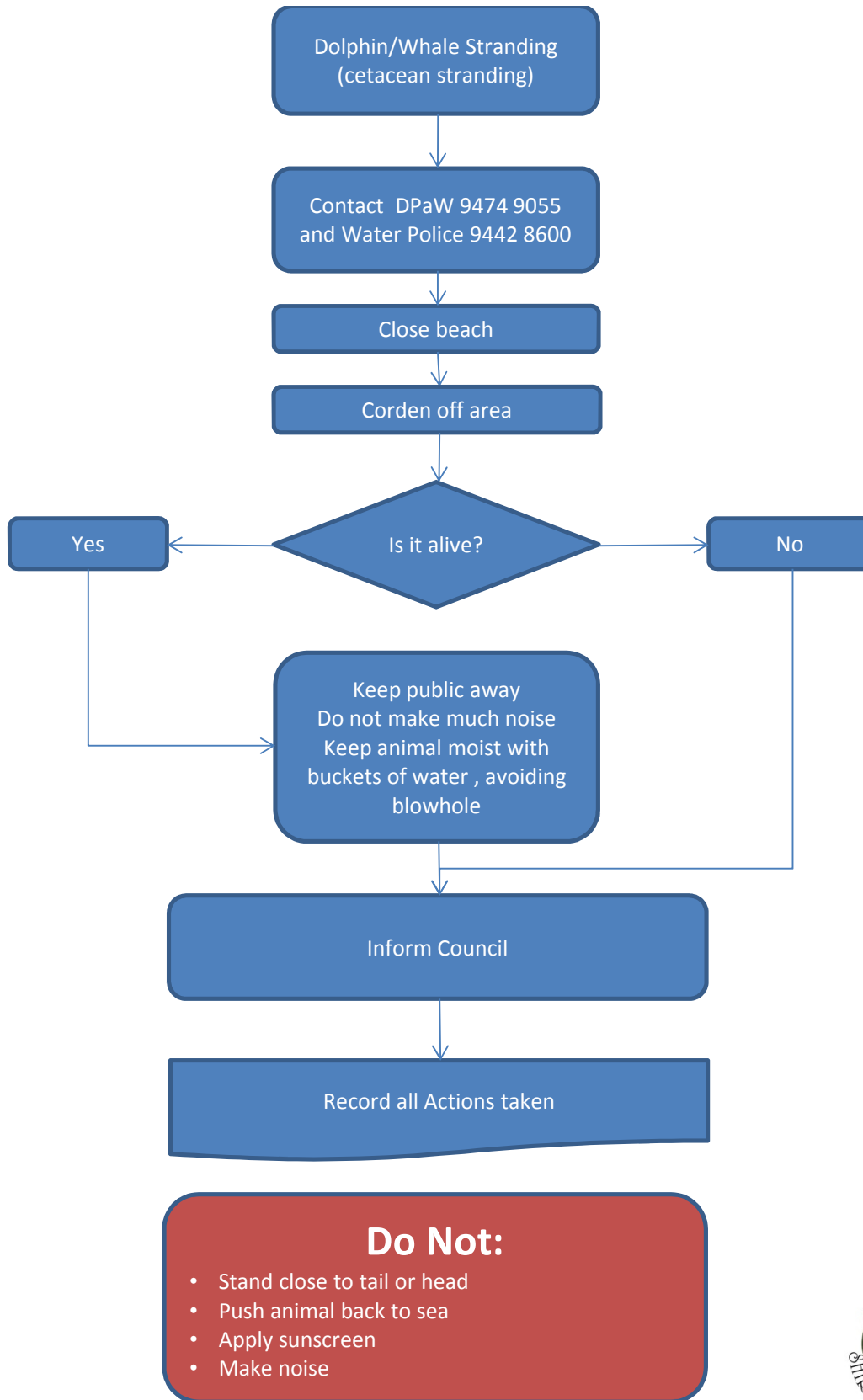


Do Not:

- Launch Craft to find or chase shark.
- Place yourself in unnecessary danger
- Give conflicting statements to Fisheries / Media



Beached Whale Flow Chart



Schedule 3



Government of **Western Australia**
Department of **Fisheries**

[Home](#) > [Education and partnerships](#) > [Shark hazard](#) > Shark response unit

Shark response unit

The Shark Response Unit was created in early 2012 to conduct research into shark populations and movements, improve [response plans and procedures](#), and provide advice and information to members of the public that will assist them in making informed decisions when using the aquatic environment.

The Unit has received \$3.75m in funding over five years which includes \$1.7m for four major [research projects](#). We have also commissioned our patrol vessel *Hamelin* to the Unit to improve our capability to manage shark hazards and carry out important shark research and tagging activities along the WA coast.

We will work to highlight the importance of reporting shark sightings to the [Water Police](#) and the communication and response process that follows. The Unit will also investigate systems that alert beach goers and other users of the aquatic environment when shark sightings and incidents occur.

The Unit is also tasked with:

- Exploring the use of community-based programs that could contribute to public safety along our coast;
- Undertaking a desktop study to evaluate the effectiveness of shark deterrent or repellent devices in the marketplace; and
- Investigate the legislative and social implications and risks for any potential shark cage tourism.

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Shark safety

Of the 160-plus known species of Australian sharks, only three are regarded as posing a significant risk to human safety:

- the white shark or white pointer/great white (*Carcharodon carcharias*),
- tiger shark (*Galeocerdo cuvier*) and
- bull shark (*Carcharhinus leucas*).

In WA, the majority of fatalities are attributed to white sharks.

Wobbegong, hammerhead and whaler sharks, while usually harmless, have also bitten humans, but the bites are rarely fatal. As is the case with other wild animals, sharks may bite when they feel threatened and, no matter how big or small, should be left alone.

Reducing the risk of shark interactions

The rarity of shark attacks does not take away from the serious nature of a fatal attack when it does occur. Nor does the seemingly random nature of shark attacks help to allay fears about being bitten. The wide range of shark behaviours, injuries to victims and circumstances involved with shark attacks, suggest that there is no easy single explanation for why sharks very occasionally bite people.

While we say these kinds of attacks are rare, there are a few common sense tips to reduce the risk of encountering sharks:

- Swim between the flags at patrolled beaches.
- Swim close to shore
- Swim, dive or surf with other people.
- Avoid areas where there are large schools of fish, dolphins, seals or sea lions and close to birdrookeries.
- Avoid areas where animal, human or fish waste enter the water.
- Avoid deep channels or areas with deep drop-offs nearby.
- Do not remain in the water with bleeding wounds.
- Look carefully before jumping into the water from a boat or jetty.
- If spearing fish, don't carry dead or bleeding fish attached to you and remove all speared fish from the water as quickly as possible.
- If schooling fish or other wildlife start to behave erratically or congregate in large numbers, leave the water.
- If you see a shark, leave the water as quickly and calmly as possible – avoid excessive splashing or noise.

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[Home](#) > [Education and partnerships](#) > [Shark hazard](#) > Shark sightings and response

Shark sightings and response

Shark sightings should be reported to the Water Police on 9442 8600. This number is staffed 24 hours a day, seven days a week.

Surf Life Saving WA provides frequent updates on its helicopter beach patrols and shark sightings via [Twitter](#) and [Facebook](#).

Our officers and the WA Police, with support from the Department of Environment and Conservation, Rottnest Island Authority, coastal Local Government Authorities (ranger services) and the frontline of beach safety – Surf Life Saving WA – all play their part to keep swimmers safe.

Surf lifesavers are watching from the beaches, on the water and in the air and public officers are ready to respond to sightings and incidents.

Shark hazard plan

We manage the Western Australia's Shark Hazard Response Plan which is designed to reduce the risk of shark interactions at WA beaches. The plan involves several government agencies, local councils and community groups, including surf lifesavers.

Our staff are rostered to respond to shark sightings issued by SMS from Water Police and assume the role of Operations Manager. Where possible, the Operations Manager makes contact with the person making the report to ascertain further details and confirm information received in the SMS.

The Operations Manager then performs a risk assessment of the best available information and assesses the reported shark sighting as a lower or higher risk to the public. The type of information and factors included in the risk assessment include the size of shark, species if known, distance from shore, location, whether other people are recreating nearby and any other relevant information.

Emergency management

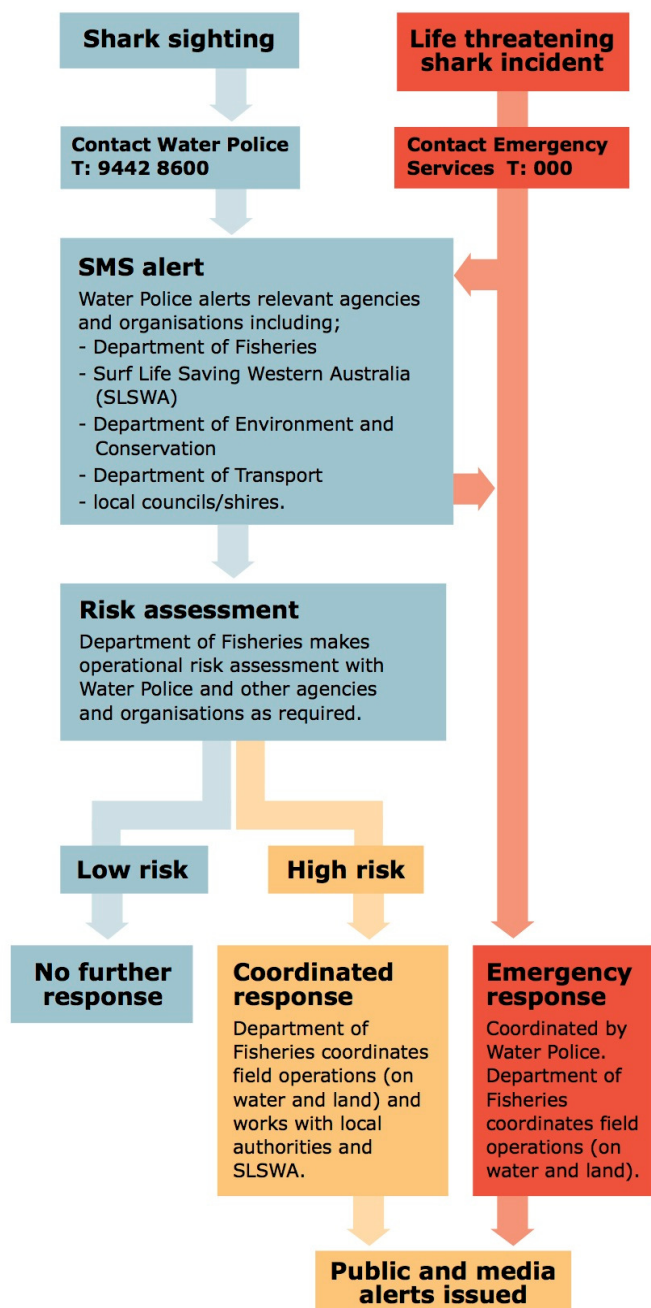
In all shark sightings and incidents, the Water Police act as the first point of call and initiate the first response.

WA Police is the Hazard Management Authority for sea search and rescue in Western Australia. The Water Police's role is to receive calls and coordinate search and rescue operations from their base in North Fremantle.

If a serious shark incident occurs, WA Police will act as the lead agency.

Sea search and rescue operations are undertaken in conjunction with FESA Marine Volunteers, Department of Transport, Surf Life Saving WA, and local government authorities.

Shark sighting and response procedure



Surf Life Saving and local authorities

SLSWA and local government authorities (LGAs) are responsible for beach patrols and beach safety and will sound beach alarms, clear the water and close beaches if required, following a shark sighting or incident.

SLSWA also has Statewide standard operating procedures for shark sightings, including guidelines on when to clear the water and close a beach and how long a beach should remain closed.

LGAs will clear the water and close the beaches if required, following a sighting or incident. Standardised beach closure signs will be deployed by LGAs, if beaches are closed following shark sightings/incidents.

Details on patrols for your WA beaches can be obtained from [Surf Life Saving WA](#).

Helicopter shark surveillance

The State Government has expanded the Western Australian helicopter shark patrol service in 2011/12. Helicopters are fitted with GPS technology that can be used to pinpoint potential sightings, as well as a siren to alert swimmers and the latest communication equipment to alert surf lifesavers on the beach and Water Police.

Surf Living Saving WA's rescue helicopter covers the metropolitan area from Dawesville in the south to Yanchep/Capricorn in the north. Patrols also sweep Rottnest Island at weekends and during school holidays.

Weather permitting, the service provides 189 flying days patrolling WA beaches.

A second SLSWA helicopter undertakes patrols from Bunbury to Margaret River from late November to the end of January.

Further information on [patrol schedules](#) is available from SLSWA.

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Fisheries Occasional Publication No. 109, 2012

**A correlation study of the
potential risk factors associated
with white shark attacks in
Western Australian waters
November 2012**



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Contents

Executive Summary	1
White Shark attacks have increased.....	1
Summary of Outcomes.	1
Most White Shark attacks occur offshore.....	1
White Shark attacks aren't site specific.	1
White Sharks prefer cooler water.....	2
White Shark attacks can happen at any time of day.....	2
Sharks don't care about the weather.	2
Conclusion.	2
Background.....	3
Methods	3
Results.....	4
1. Time (attacks per calendar/ financial and pooled years).....	4
2. Time with population effect (per capita attack rate)	4
3. Location	4
4. Activity and Distance from Shore.....	5
5. Proximity to Seal and Sea Lion Colonies	5
7. Season	6
8. Day of the Week	6
9. Time of Day	6
10. Air Temperature.....	7
11. Water Temperatures.....	7
12. Solar Exposure/Light Conditions.....	7
13. Rain	7
14. Wind Speed.....	7
15. Wind Direction.....	8
16. Wave Height	8
17. Number of other people in water	8
Conclusion	9
Next Steps.....	9

Executive Summary

White Shark attacks have increased.

The incidence of White Sharks attacks (while still very low) has slowly increased over the past two decades at a rate faster than human population growth. This trend has been exceeded recently with an unprecedented number of attacks (5) occurring within the last year from September 2011. The Department of Fisheries has reviewed all the attacks recorded in Western Australia for the past 20 years and compared these with conditions at the time to identify any common patterns.

Summary of Outcomes.

Factors examined and patterns identified that can help inform ocean users about the relative risks they face when entering the water.

Higher Risk	Neutral	Lower Risk
Offshore (> 30 m from coastal shore)	Time of Day	Near Shore (< 30m from coastal shore)
Winter/Spring	Air Temperature	Summer/Autumn
Cooler Water (< 20° C)	Weather – light, rain and wind conditions	Warmer Water (> 22° C)
Deeper Water (> 5 m depth)		Shallow Water (< 5m depth)
Near whale carcasses and other potential attractants including seal/sea lion colonies		

Most White Shark attacks occur offshore.

Attacks are more likely to occur offshore, in deeper waters. Of the 26 shark attacks in Western Australia, only one has occurred close (< 30 m) to the shore. The highest number of attacks has occurred more than a kilometre offshore with SCUBA divers and snorkelers (44%) having the highest incidence followed by surfers and sea kayakers (37%). Swimmers, despite being the most numerous users of the ocean have comprised the smallest number of attacks.

White Shark attacks aren't site specific.

Attacks have occurred around most of the southern half of the Western Australian coast with the majority occurring in the greater Perth region down to Margaret River. This pattern is consistent with the distribution of water based activities around this part of the Western Australian coast.

The data do not show a clear increase in incidences of attack near seal and sea lion colonies. However, as White Sharks are known to attack seals and sea lions caution should be exercised in such locations.

White Sharks prefer cooler water.

Although overall water usage is highest during the summer and autumn, more shark attacks have occurred in winter and spring. This pattern is consistent with White Sharks being a temperate (cooler water) species. Relatively few attacks have occurred in waters above 22° C, most have occurred in waters below 20° C.

The winter and spring period also corresponds with whale migration season. While this may be coincidental, White Sharks are known to feed on whales so caution should be exercised near a whale carcass or other such attractant.

White Shark attacks can happen at any time of day.

There was no evidence to suggest that the risk of White Shark attack was greatly increased at dawn or dusk. Most attacks occurred in the middle of the day and data from tagged sharks show that they are active at all times.

Sharks don't care about the weather.

There is no specific pattern of weather conditions coinciding with higher levels of attack. The incidence of attacks is not limited to calm, overcast days.

Conclusion.

The evidence suggests the risk of attack by White Sharks remains very small, but it has increased slowly over the past two decades with an unprecedented number of attacks occurring during the 12 months from September 2011.

The relative risk of White Shark attack appears to be higher for activities undertaken further offshore from the coast, particularly when these are undertaken in cooler waters (< 20° C). Activities undertaken in shallow water close to the mainland, and especially when the water is relatively warm (> 22° C), appear to have the lowest relative risk. **There will, however, always be some risk of shark attack when undertaking activities in any marine waters.**

These findings will be used to assist future policy decisions on White Shark attacks, including the determination of factors that may constitute an imminent threat of attack. The findings will also form part of the community education campaign.

Background

In November 2011, in response to a number of shark attack fatalities in Western Australia, the State Government announced a series of initiatives designed to help reduce the risk of shark attacks for people undertaking water based activities in the WA marine environment. This included a series of research projects to be undertaken over three years to improve knowledge about white shark behaviour and their interactions with the WA public.

One of the research projects was designed to undertake analyses of the data available on attacks attributed to white sharks within Western Australia to assess if there were any specific factors associated with different types, location, conditions or timing of water based activities that may potentially increase or decrease the risk of such attacks. These correlation based analyses were aimed at determining whether improved guidance could be provided to the WA public for use in evaluating their personal risk profiles when considering undertaking activities in the marine environment

Methods

All the data associated with each of the white shark attacks recorded within Western Australia have been examined in detail. Much of the data on shark attacks within Western Australia was obtained from the Australian Shark Attack File which has been compiled by staff at the Taronga Park Zoo in Sydney for over 30 years.

While the Shark Attack File is recognized as the best source of such information in Australia, the data were not always comprehensive due to the nature of the events. In some cases there was not complete certainty that a white shark was the species involved and for many recorded attacks the shark attack file did not have complete information on variables such as water temperature or wind strength. To facilitate the most complete assessments possible missing data were obtained from other sources such as the Bureau of Meteorology and the Department of Transport.

Using the collated set of data, a series of correlation and/or graphical analyses was undertaken. It must be noted that given the small size of the dataset available, it was difficult in some cases to conclusively examine each of the related factors and generate definitive conclusions. In such cases it was therefore determined whether a particular factor should remain as being plausible. Furthermore, the analyses only covered attacks by white sharks, the study did not extend to the examination of attacks by other species of shark (e.g. tiger or whaler) or where the species could not be identified with a reasonable degree of certainty.

Results

1. Time (attacks per calendar/ financial and pooled years)

Statistical Test – Yes

Significance Yes - $P < 0.05$

Despite the high variability in the numbers of attacks between years there has been a significant increasing trend in the annual incidence of attacks since 1995 (Figure 1a). It is also of note that since 2008, attacks have occurred every year. The highest number of attacks occurred in calendar year 2004 but the highest number in a twelve month period was the period July 2011 – June 2012 (Figure 1b). The increase in incidence during the past 20 years is clearer when data are pooled into two year blocks (Figure 1c).

2. Time with population effect (per capita attack rate)

Statistical Test – Yes

Significance Yes - $P < 0.05$ (pooled)

There has been an increasing trend ($P = 0.07$) in the annual rate of attacks (expressed as the number of attacks per 1 million residents of Western Australian) since 1995. When the data are pooled into two year blocks to deal with zero values, the trend becomes statistically significant ($P = 0.02$). The annual rate has increased from 0.4 per million in 1995/96 to 1 per million 2010/11 with what appear to be runs of two or three years where there are slightly higher or lower rates. The rate for 2011-12 was, however, approximately double the long term trend at 2 per million.

This suggests that the risk of attack has been increasing through this 20 year period beyond that expected from human population growth. Furthermore last year's rate was well above this trend. Investigations into the long term trend, the cycles and the recent spike in attacks are currently underway.

3. Location

Statistical Test – Graphical only

Significance - Yes

The majority of attacks in WA have occurred in the region extending from the broader Perth area in the north down the lower west coast to approximately Margaret River (Figure 3). Given that white sharks occur along all of the southern WA coast and occasionally at least as far north as Karratha, the distribution of attacks appears strongly related to where the majority of the population resides and therefore where the highest levels of water activities are being undertaken. The pattern also probably reflects differences in where white sharks are more likely to occur along the WA coast.

White sharks are a temperate, cooler water species that occasionally move into warmer waters. The southern coast of WA is therefore presumably closer to the centre of the distribution of the western population of white sharks which is most likely to be in South

Australian waters. The risk of a random encounter with a white shark, and therefore of the potential for an attack by this species, is higher along the south and lower west coasts of Western Australia than off the mid-west and north west coasts.

Differences among years in oceanographic conditions are also expected to be associated with inter-annual variations in white shark abundance in the regions along the WA coast. Any quantification of this, however, would be reliant on the further data being collected through research activities such as the shark monitoring (tagging) program and a more detailed investigation of the oceanographic data across this 20 year period which are both part of the next phase of this study.

4. Activity and Distance from Shore

Statistical Test: Graphical

Significance - Yes

Most attacks have occurred further than 30 m from the mainland shore (i.e. Rottnest Island, the Abrolhos Islands and other islands are considered offshore in this context), with only one attack occurring less than 30 m offshore of the mainland coast (Figure 4). This is opposite to where the majority of water activities (i.e. swimming) generally occurs.

Attacks more commonly involve divers/snorkelers (44%) and surfers/kayakers (37%) with swimmers accounting for the remaining 11% of attacks. These differences among activities are most likely to be strongly related to variations in the distance offshore and the depth of water where these different activities occur rather than the specific activity, with swimming generally occurring much closer to shore in shallow water where the risk of attack appears to be lower (based on relative number of swimmers vs. numbers of divers/surfers).

It is noted that at some locations and times there will be more surfers and divers than swimmers. During winter more people tend to surf than swim and divers are more common in waters further offshore than where swimming and surfing typically occur. Therefore activity and location are not independent variables and there are insufficient data to fully discriminate between these factors.

5. Proximity to Seal and Sea Lion Colonies

Statistical Test – Yes

Significance – Remains Plausible

The number of attacks in close proximity (<5 km) of pinniped colonies was less than the number of attacks that occurred 5-9 km away from colonies with collectively more attacks having occurred > 10 km away (Figure 5).

There has only been one white shark attack in the area of highest seal density (the Recherche Archipelago). However, these results may reflect relatively lower levels of human water activity in these regions. Therefore it remains plausible that there is an increased risk of attack near these colonies.

7. Season

Statistical Test- Graphical

Significance - Yes

More attacks have occurred in the winter and spring periods compared to summer and autumn (Figure 6a). This is opposite to the time when the highest level of water usage occurs especially when the highest numbers of people are swimming. More surfers were attacked in winter, but the rates of surfing can be higher during this time due to favourable swell conditions. Of the four attacks on swimmers, three were in spring, and one in autumn but the highest number of swimmers would be in summer.

The distribution and movements of white sharks will lead to seasonal changes in their relative abundance off different regions of the WA coast which may also be a factor in seasonal attack rates. The validated commercial fishery and research data indicate that winter and spring are the times when there is generally a higher abundance of white sharks in south-western Australia (Figure 6 b).

These data, in combination with the time when the highest number of attacks have occurred, do not support the commonly held notion that the shark season is late spring – early summer.

8. Day of the Week

Statistical Test - Yes

Significance – Not when pattern of use is considered

Although attacks have occurred on every day of the week, most of the attacks have occurred on either a Saturday (37%) or a Sunday (22%). This is consistent with the expected pattern of water based activities being greater during the weekend.

9. Time of Day

Statistical Test – Yes

Significance - No

Contrary to popular belief that dawn and dusk are periods of higher risk of shark attack, white shark attacks have occurred at all times of the day (Figure 8a). Only 24% of recorded attacks have occurred near dawn and dusk (12% within 1 hour of both sunrise and sunset). Outside of these two periods, more attacks occurred in the morning (48%) than in the afternoon (28%). This pattern looks to be consistent with the relative levels of human activity across these different time periods.

Therefore, there is no evidence that water activities at dusk and dawn pose a significantly greater risk than at other times of the day. Importantly, there is no time of day that appears to be associated with a materially lower risk of attack than other times of the day.

Data from tagged white sharks indicate they are active during both day and night (Figure 8b). These data do not show a period during the day (except close to midnight) when detection levels are low. That no attacks have been recorded at night is most likely a reflection of human activity patterns as there is relatively minimal night-time water activity.

10. Air Temperature

Statistical Test – Yes

Significance - No

Attacks occurred across the normal range of air temperatures for south-western WA (Figure 9). The higher rates of attack at air temperatures between 12 – 18° C are likely to reflect the fact that more attacks tend to occur in winter/spring and in the mornings, with few attacks to the north of Perth.

11. Water Temperatures

Statistical Test – Yes

Significance – $P < 0.05$ Yes

The frequency of attacks appears to decrease with increasing water temperature, with 67% of attacks having occurred in waters below 20° C and only one has occurred above 22° C (Figure 10). The observed relationship is consistent with white sharks being a temperate species that are generally distributed in cooler waters but are known to occur in waters with temperatures of 10 – 25° C. An increased abundance of white sharks in cooler waters is supported by other validated research data and the higher incidences of attacks off the southern half of the WA coast (Figure 3) and also in winter (Figure 6).

12. Solar Exposure/Light Conditions

Statistical Test – Yes

Significance - No

The analysis of light conditions when attacks have occurred (Figure 11) did not find strong evidence that the prevalence of attacks was increased on days of lower light levels (overcast). The data does not therefore support the notion that an attack is more likely in overcast conditions.

13. Rain

Statistical Test – Graphical

Significance - No

The majority (79%) of attacks occurred when the weather was fine (Figure 12). This does not support the notion that attacks are more prevalent in overcast or “gloomy” conditions. The highest numbers of attacks occurred on days of no rain which is likely to be related to the preference for people to undertake water activities when the weather is fine.

14. Wind Speed

Statistical Test – Yes

Significance - No

Due to the geographic extent over which attacks have occurred throughout southern WA, there is no meaningful way to derive a range of “usual” wind conditions against which to

assess the white shark attack data. Attacks appear to occur across the range of wind speeds where water activities would be occurring. The results do not support the concept of more attacks occurring in calm conditions. The decline in attacks at wind speeds > 20 km/hr is likely to reflect less water activities would be occurring in these unfavourable water conditions.

15. Wind Direction

Statistical Test – Yes

Significance – Could not determine

As with wind speed, it is difficult to generate an average pattern of wind direction against which to compare the conditions experienced at times of white shark attacks across the state. Using the wind pattern at Perth for a single year as a proxy for 'usual' wind direction, suggests that a higher proportion of attacks than would randomly be expected occurred when the wind was from the east, with a lower proportion when it was from the west and north-west. This pattern may reflect human activity patterns, with more activity expected to occur when conditions are more favourable, which for the lower west coast region often coincides with periods of easterly wind direction.

16. Wave Height

Statistical Test – Yes

Significance – Yes

There was a clear negative relationship between the number of attacks and significant wave height (Figure 15). Attacks were less common when wave heights exceeded 3 m. This is possibly related to fewer water based activities occurring in rough conditions, although this generality may be confounded by surfers preferring larger waves and divers/snorkelers/swimmers preferring calmer conditions.

Most attacks on surfers occurred at more than 2 m wave height, whereas most attacks on SCUBA divers and snorkelers occurred when the wave height was less than 2 m. This indicates susceptibility across a wide range of sea conditions but also that the different activities are relatively more prevalent in different conditions.

17. Number of other people in water

Statistical Test – No

Significance – Uncertain

Reliable values for the numbers of people (other than the victim) that were in the water in the vicinity of shark attacks are only available for 21 of the 27 white shark attacks recorded in Western Australia since 1995. On 14 occasions (67%), there were less than three people in the water.

It is difficult to ascertain from these data whether the risk of being attacked by a shark is higher or lower when there are many or few people in the water. The numbers of people in the water at one time is likely to be influenced by a range of factors and is confounded with the type of water activity being undertaken, i.e. divers will generally only be in small groups

compared to surfers and swimmers. There were too few data to discriminate among the groups.

Conclusion

The evidence suggests that while the risk of attack by White Sharks remains very small, it has increased slowly over the past two decades but with an unprecedented number of attacks occurring during the 12 months from September 2011.

The relative risk of White Shark attack appears to be higher for activities undertaken further offshore from the coast, particularly in cooler waters (< 20° C). Activities undertaken in shallow water close to the mainland, and especially when the water is relatively warm (> 22° C), appear to have the lowest relative risk. There will, however, always be some risk of shark attack when undertaking activities in any marine waters.

Table 1 Summary of Outcomes. Factors examined and patterns identified that can help inform ocean users about the relative risks they face when entering the water.

Higher Risk	Neutral	Lower Risk
Offshore (> 30 m from coastal shore)	Time of Day	Near Shore (< 30m from coastal shore)
Winter/Spring	Air Temperature	Summer/Autumn
Cooler Water (< 20° C)	Weather – light, rain and wind conditions	Warmer Water (> 22° C)
Deeper Water (> 5 m depth)		Shallow Water (< 5m depth)
Near whale carcasses and other potential attractants including seal/sea lion colonies		

These findings will be used to assist future policy decisions on White Shark attacks, including the determination of factors that may constitute an imminent threat of attack. The findings will also form part of a community education campaign.

Next Steps

Studies have been initiated to investigate the factors that may be associated with the upwards trend in the rate of attacks over the past 20 years. This will also examine any factors that may be associated with the cycles observed in the relative number of incidents during this period and especially any factors that may be associated with changes in conditions during the past 12 months.

Any additional information that is found through these studies that may further assist the public update their personal risk assessments for when, where and what water based activities they may be considering will be added to the community education material.

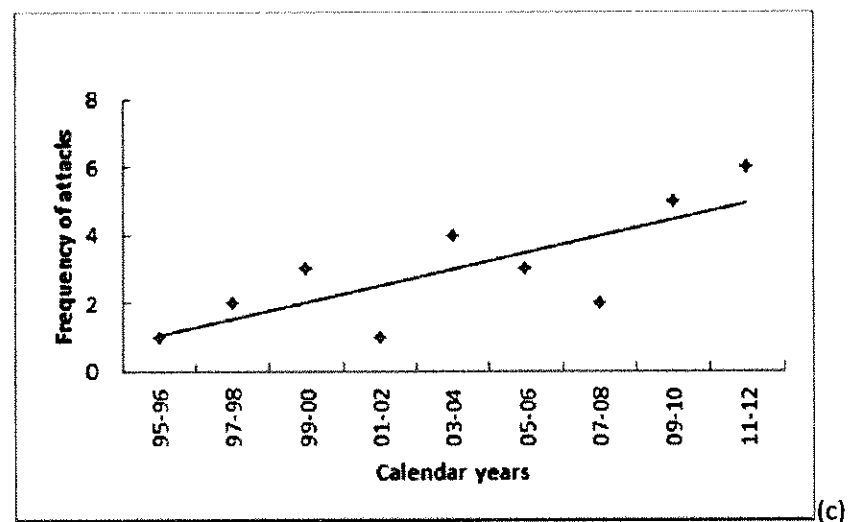
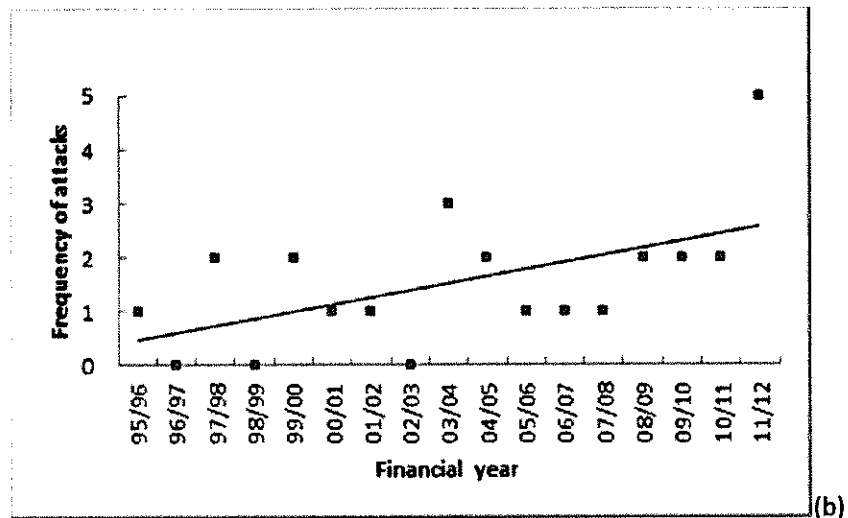
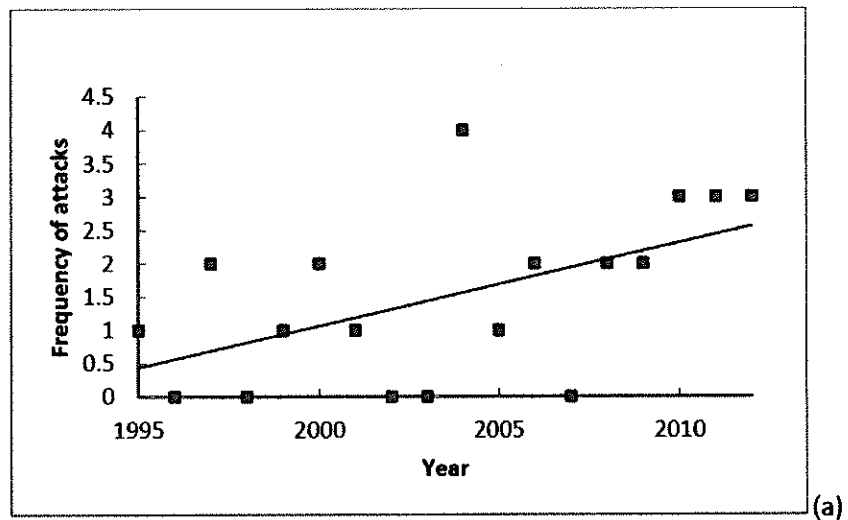


Figure 1. a) Frequency of attacks within a calendar year; b) vs financial year (June- July) c) pooled for 2 years.

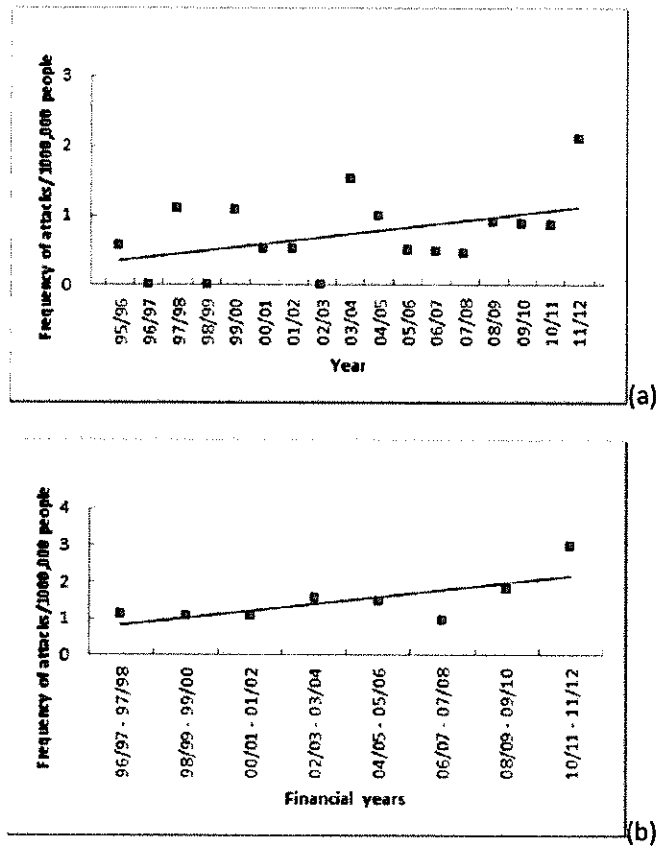


Figure 2. Frequency of attacks per 1,000,000 Western Australian residents by (a) financial year, (b) pooled by two years calendar.

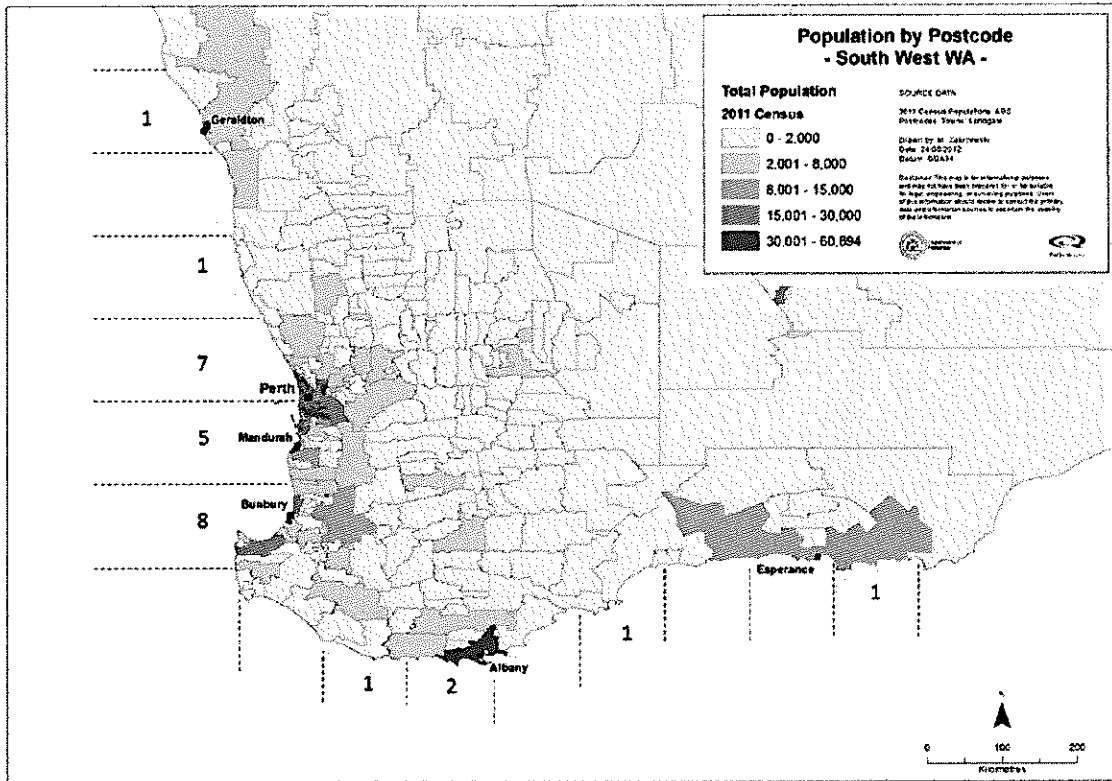


Figure 3. Frequency of attacks vs Western Australian population densities (by postal areas). Population densities are indicative only and may not always reflect levels of water activities.

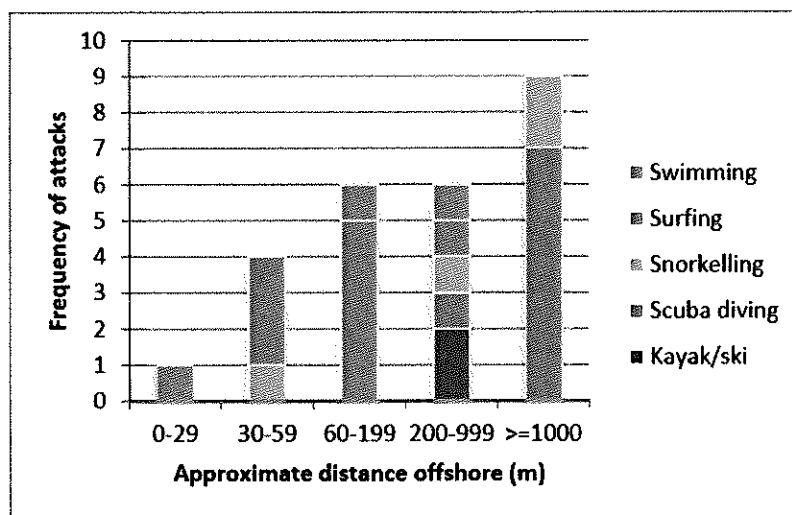


Figure 4. Frequency of attack vs distance offshore and victims' activities.

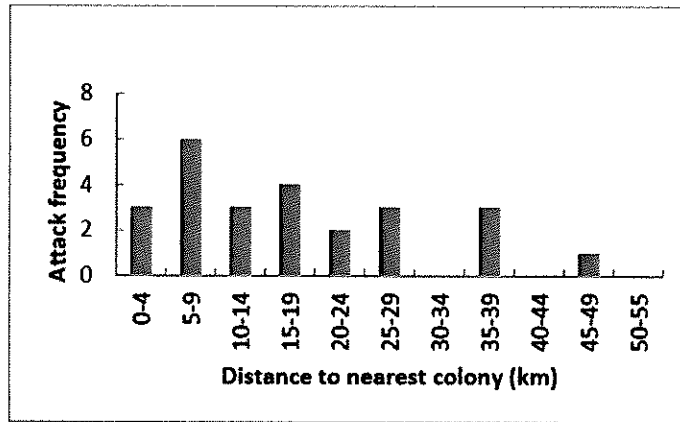


Figure 5. Frequency of attack vs distance to nearest Australian sea lion or NZ fur seal colony.

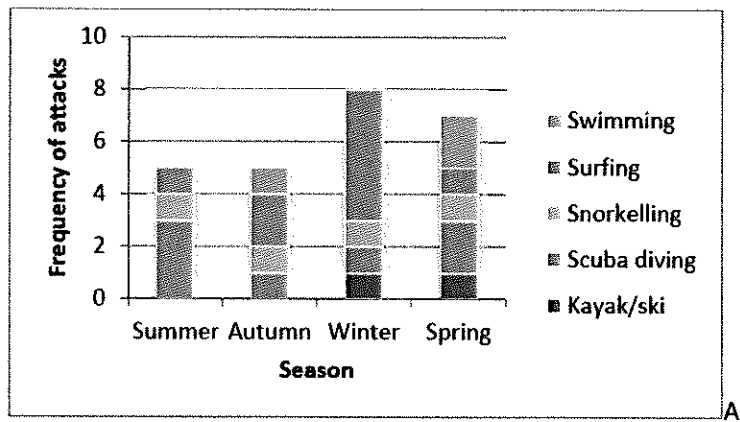


Figure 6a. Frequency of attacks vs season and victims' activities.

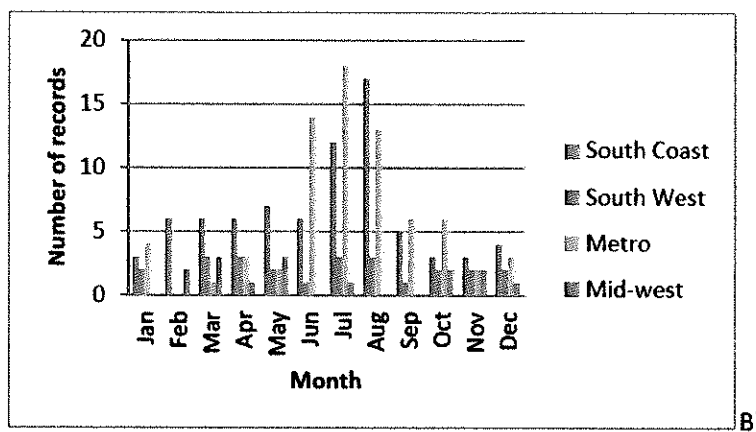


Figure 6b. Validated DoF white shark records Jul 1994 – Jul 2012. Records are derived from reported commercial catches (monthly and daily logbook returns, n=75 sharks); metropolitan Shark Monitoring Network/OTN acoustic receivers (n=81 shark days); ASAF white shark attack records (n=27) and aerial surveillance sightings (n=3). NB. Sightings by members of the public have not yet been validated or included.

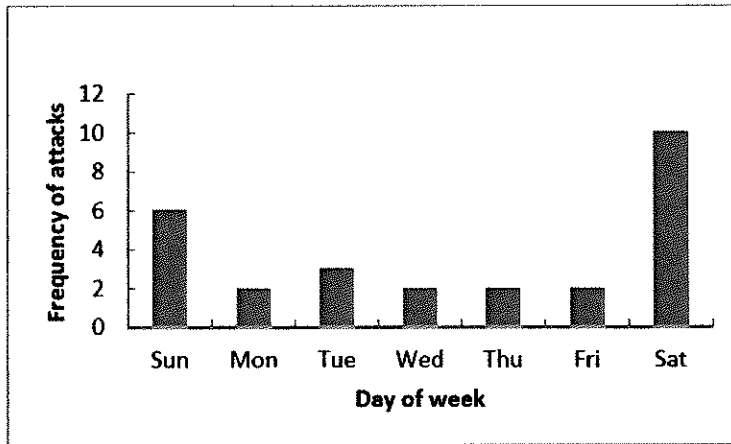


Figure 7. Frequency of attacks vs day of the week.

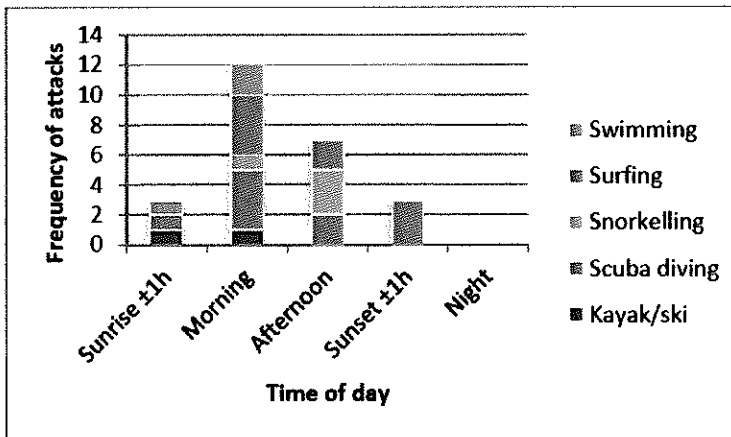


Figure 8a. Frequency of attacks vs time of day and according to victims' activities.

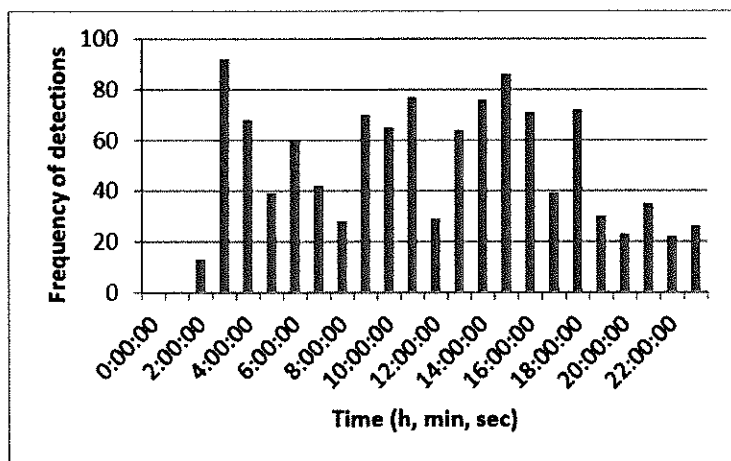


Figure 8b. Hourly frequency of tagged white shark detections by metropolitan acoustic receivers 2009-2012 (time indicates start of hourly interval eg 12:00:00 indicates detections between 12 and 1 pm).

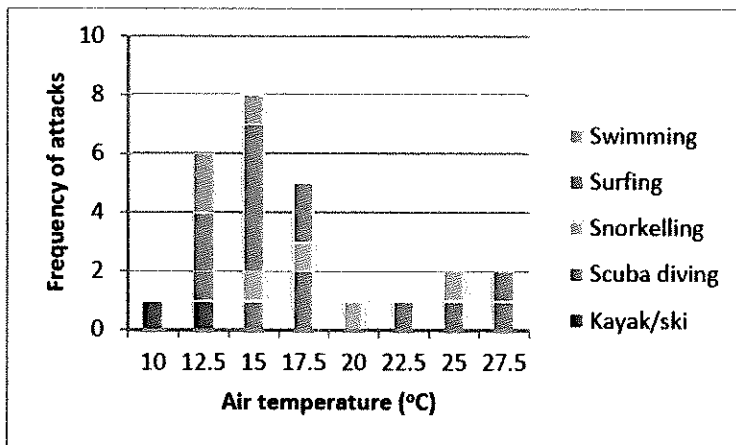


Figure 9. Frequency of attacks vs air temperature and according to victims' activities.

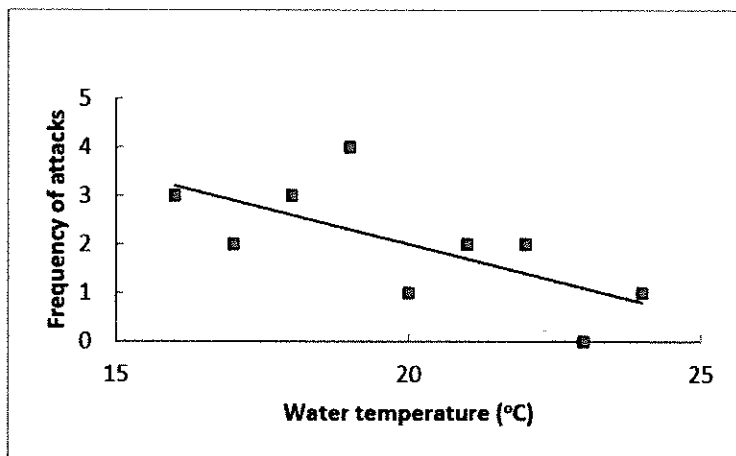


Figure 10. Frequency of attacks vs water temperature.

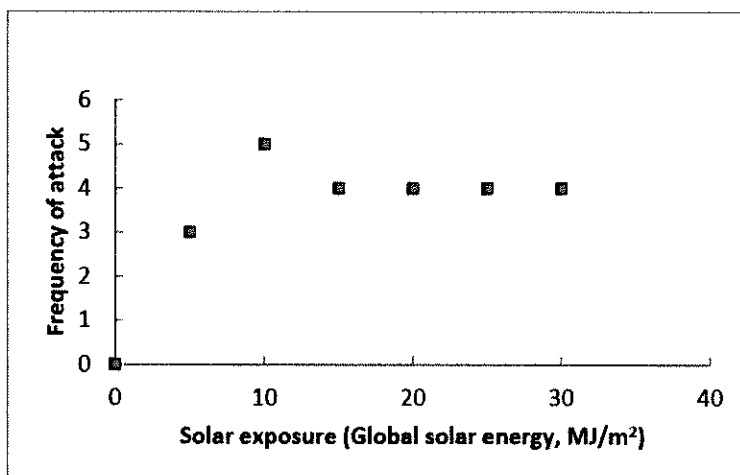


Figure 11. Frequency of attacks vs solar exposure.

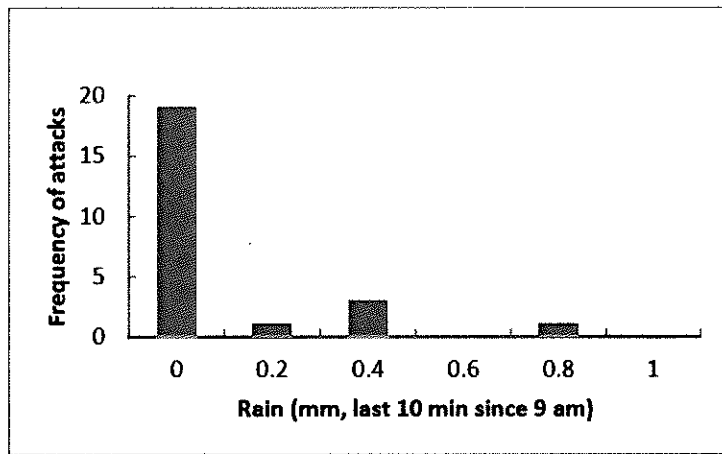


Figure 12. Frequency of attacks vs rainfall.

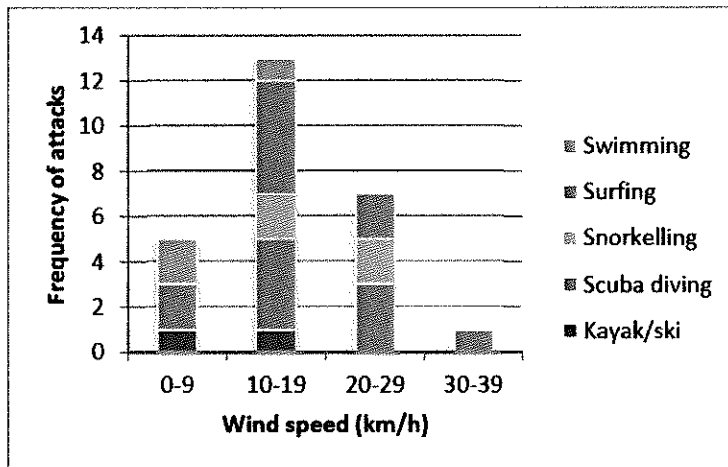


Figure 13. Frequency of attacks vs wind speed.

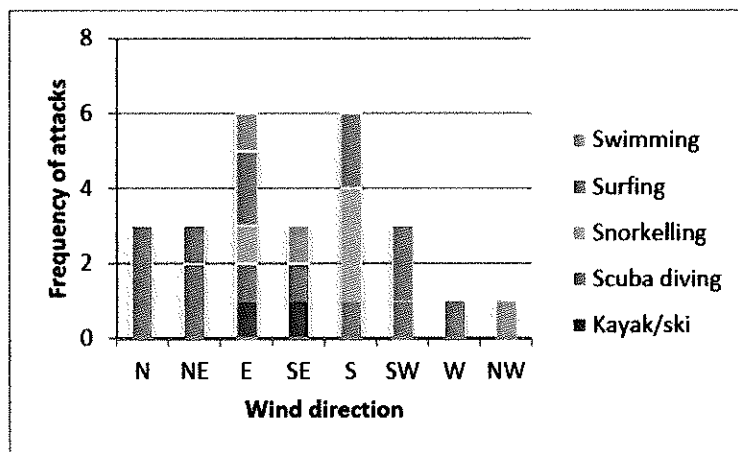


Figure 14. Frequency of attacks vs wind direction.

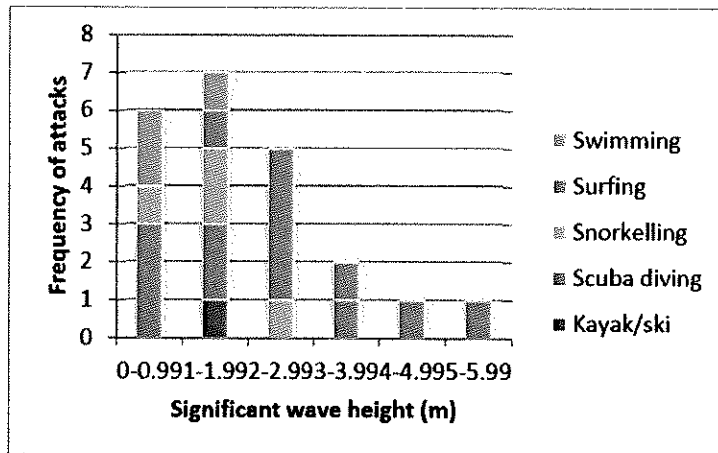


Figure 15. Frequency of attacks vs significant wave height by activity (Data from Dept. of Transport) (Note, trend far less clear using the other data sources on wave height from NCEP/CSIRO)

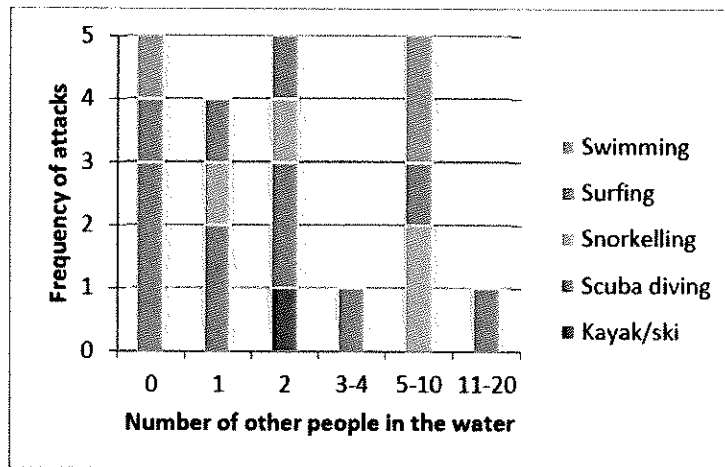


Figure 16. Frequency of attacks vs number of people in the water in the immediate vicinity (other than the victim).



SURF LIFE SAVING AUSTRALIA POLICY STATEMENT SHARK SAFETY

**POLICY
NUMBER
1.10
NOV
2010**

INTRODUCTION

The probability of a shark related incident is unlikely and other forms of accidental death and injury particularly drowning are far more common for beach users. However, the risk of a shark related incident is real and this policy provides a guide for the public and the provision of lifesaving services in recognising and minimising this risk whilst sharing an environment that sharks may inhabit.

AIM

This policy aims to:

- i. Help identify existing and potential health and safety issues.
- ii. Raise the overall awareness of hazard identification and risk reduction.
- iii. Assist in establishing risk management procedures.

DEFINITIONS

For the purposes of this document the word shark is used in the broad sense to include all sharks, although it is recognised that not all sharks are dangerous with nearly all fatal attacks in coastal waters being attributed to just three species – bull sharks, tiger sharks and white sharks (the latter also known as great white or white pointer sharks).

Shark safety or control equipment may include mesh nets or drum lines, power craft strategically placed for shark patrol and dispersing sharks from beach areas, or specially first aid provisions including specialist personnel and trauma-haemorrhage kits. Please note, mesh nets and drum lines do not exist as a barrier excluding sharks from swimmers. They are fishing devices designed to reduce the population of sharks in a shark control area.

PERSONAL SAFETY

Some safety guidelines that may assist in reducing the risk of an incident involving sharks and humans include:

- Always swim between the red and yellow patrol flags and surf at patrolled beaches. There is an increased chance that shark safety equipment is in place and rescue services are in close proximity should an incident occur.
- Obey the lifesavers' and lifeguards' advice, and heed all flags and notice board warnings. Leave the water immediately if a shark is sighted or if advised by the lifesavers/lifeguards (siren, bell or red and white quartered flags) that a shark has been sighted.
- Avoid entering the water after dusk, at night or before dawn when some sharks are typically more active.
- Avoid swimming in or near murky or silt-laden waters.
- Avoid swimming in or near river mouths, creeks, deep channels and canals
- Avoid swimming or surfing alone.
- Avoid swimming or surfing when bleeding.
- Avoid swimming or surfing near schools of fish.
- Avoid swimming near, or interfere with, shark control equipment.

It is important to recognise that there is always some inherent risk when using an environment inhabited by sharks. The risk of a shark related incidents varies according to the time of day, time of year, the geographic location and species of shark in the area. Other forms of accidental death and injury, particularly drowning, are far more common for beach users.

3 December 2013 - Attachment 8.2.3 c

ACTIONS ON SIGHTINGS

In the event of a shark sighting the following precautions are recommended:

- i. Request all swimmers to leave the water
- ii. Close the beach to all swimming and post appropriate signage (if specific signage is not available standard "no swimming" and "danger" signs may be utilised).
- iii. Advise beach visitors to remain clear of the water.
- iv. Do not attempt to kill, capture or injure the animal.
- v. Record as much detail regarding the sighting as possible, including the size, number and behaviour of the shark(s), presence of other marine creatures (e.g. fish schools, dolphins, seals) and the response of the shark(s) to any attempt at dispersing them from the immediate vicinity.
- vi. The beach should be closed for a **minimum** of one hour from the time of the **LAST** sighting, with increased surveillance for an additional hour at the location of the sighting and surrounding areas until the potential risk is deemed to have subsided.
- vii. If absolutely necessary, engage power craft or aerial assets and attempt to disperse the shark(s) from the area by using engine noise and water surface disruption (care needs to be taken to ensure the lives of the operator and by-standers are not endangered).

Note: *the effectiveness and value of power craft disbursement is currently unknown and the first preference would be to close the beach and for the beach to remain closed until such time that the shark is deemed to have left the area.*

ACTIONS IN EVENT OF SHARK ATTACK

Shark attacks can result in massive tissue damage and severe blood loss. The following general treatment applies (specific information is contained within the SLSA training manual):

- i. Bring the patient to the beach as quickly as possible.
- ii. Apply immediate first aid.
- iii. Co-ordinate hospital transport and pre-hospital emergency care.
- iv. Follow precautions outlined in 'Actions on Sightings'.
- v. Advise relevant Government Department as soon as possible and refer to any state/territory 'Shark Response Plan' where applicable (currently established in SA and WA).

THE SHARK CONTROL PROGRAM

Refer to state/territory policy where applicable.

FURTHER ADVICE AND INFORMATION

If you require further advice or assistance please contact Surf Life Saving Australia on (02) 9300 4000 or your state centre:

New South Wales (02) 9984 7188
Queensland (07) 3846 8000
Victoria (03) 9676 6900
South Australia (08) 8354 6900
Western Australia (08) 9243 9444
Tasmania (03) 6223 5555
Northern Territory (08) 8985 6588



SHARK HAZARD RESPONSE PLAN

REGIONAL RESPONSE



Fish for the future

Last updated
October 2011

3 December 2013 - Attachment 8.2.3 d

CONTENTS

- 1. Aims and Format of this Plan 3**
 - 1.1 Definitions 3
 - 1.2 Acronyms 3
- 2. DoF Policy Statement..... 4**
- 3. Reported Sightings – Response Summary 5**
 - 3.1 Taking Sighting Reports – What do I do?..... 6
 - Reports directly from the public* 6
 - Reports from the Police.* 6
- 4. Shark Sighting Report Template 7**
 - 4.1 Media Response to Sightings..... 8
 - When to issue a media release*..... 8
- 5. Roles and Responsibilities 9**
 - 5.1 Role of Department of Fisheries Staff 9
 - 5.1.1 *CEO / DRS* 9
 - 5.1.2 *Operations Manager* 9
 - 5.1.3 *Media Liaison Officer* 9
 - 5.1.4 *Media Spokesperson* 10
 - 5.1.5 *Research Representative* 10
 - 5.1.6 *Field Officers*..... 10
 - 5.1.7 *Alerting Officer*..... 10
 - 5.2 Role of other Organisations and Departments 10
 - 5.2.1 *The WA Police* 10
 - 5.2.2 *Surf Life Saving WA and Local Government Authorities.*..... 11
- 6. DoF Operational Procedures 11**
 - 6.1 Field Operations 11
 - 6.2 Media Communications 11
 - 6.3 Public relations 12
- 7. Schedule 1: Telephone Contacts 13**
 - 7.1 Department of Fisheries - Key Contacts 13
 - 7.2 Departments and Organisations - Key Contacts 14
- 8. Schedule 2: Operational Assessment/Running Sheet..... 16**

1. Aims and Format of this Plan

This document is designed to guide officers of the Department of Fisheries (DoF) in effectively and efficiently responding to shark sightings and incidents in regional areas, both in terms of operations and the response to the media and the general public.

It contains details of Roles and Responsibilities, Operational Procedures and Contact Lists relevant to the Shark Hazard Response in regional areas.

1.1 Definitions

Sighting	Reported sightings of a shark, confirmed or unconfirmed.
Interaction	When a shark has interacted with a person or boat but has not attacked. (eg shark has nudged a boat).
Attack	When a shark attacks a person causing physical injury.
Incident	An interaction or attack that is endangering human life.
Serious Incident	A fatal attack by a shark on a person or an attack that is of such a serious nature that it is likely that the person may die.

1.2 Acronyms

CEO	Chief Executive Officer
DRS	Director, Regional Services
DoF	Department Of Fisheries Western Australia
DOT	Department of Transport
DEC	Department of Environment and Conservation
LGA	Local Government Authority
OIC	Officer in Charge
SLSWA	Surf Life Saving Western Australia
WPCC	Water Police Communications Centre
FESA	Fire and Emergency Services Authority of WA

2. DoF Policy Statement

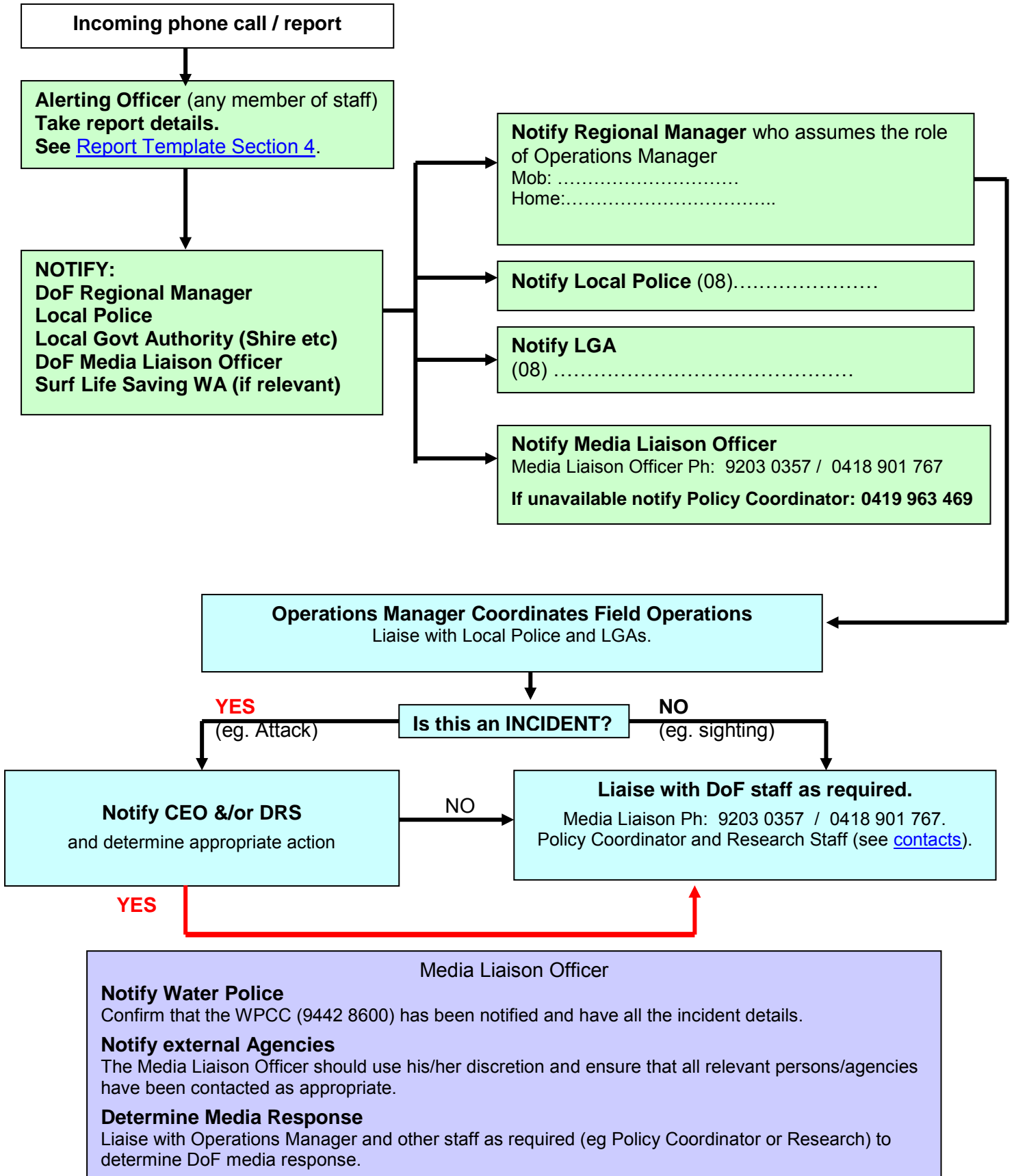
Sharks are a highly successful and diverse group of fishes, which have evolved over 400 million years to inhabit nearly all aquatic environments on earth. Most species are either small, un-aggressive or inhabit waters where they are unlikely to encounter man and only a handful of the over 350 extant species pose a potential threat to human life.

Western Australia is within the geographical range of most species that are considered to be potentially dangerous and the procedures outlined in the Department of Fisheries Shark Hazard Response Plan are a necessary and responsible contingency.

Three potentially dangerous shark species occur in southern Western Australia. These are the tiger shark, *Galeocerdo cuvier*, the bull shark *Carcharhinus leucas*, and the white shark, *Carcharodon carcharias*. The white shark is recognised as vulnerable by the World Conservation Union (IUCN) Redlist and the Australian Society for Fish Biology. This designation denotes a species, which faces a high risk of extinction in the wild in the medium-term future. The DoF and the Commonwealth Government have afforded this species a totally protected status due to the very real concerns that the survival of the species in Australian waters is uncertain. Given the conservation status of this species, where a white shark is considered to be a threat under the extent of this plan, it is intended that every attempt will be made to mitigate the threat without causing harm to the shark.

Although the risk of shark attack exists any time people enter the ocean, the risk is extremely small, with less than one fatal shark attack per year nationwide. Sharks do not generally target humans as prey and scientific studies suggest that victims are mistaken for more usual prey species such as seals, sea lions and turtles. There is no evidence that individual white sharks are involved in multiple attacks on humans, however there are some locations related to their normal prey where white sharks regularly occur e.g. seal colonies.

3. Reported Sightings – Response Summary



3.1 Taking Sighting Reports – What do I do?

Reports directly from the public

When telephone or face-to-face reports are received directly from the public, the DoF officer receiving the call takes on the role of [Alerting Officer](#) and can report the details.

A [Report Template](#) (Section 4) is available and the important details to record include:

- Name and contact number of reporting person
- Nature of alert (sighting or attack)
- Time of sighting
- Accurate location
- Description of shark
- Direction of travel
- Has anyone else been notified (Police, LGA's or SLSWA)?

The Alerting Officer is then required to:

- Contact Local Police
- Contact the Operations Manager (relevant Regional Manager)
- Contact the Media Liaison Officer (Ph: 9203 0357 or Mob. 0418 901 767)
- If these people cannot be contacted, the Policy Coordinator must be notified (Ph: 9432 8009 or Mob. 0419 963 469).

Reports from the Police.

Police procedures require that regional Police notify Water Police in the event of an incident as a matter of course. The WPCC (Ph: 9442 8600) is always manned.

When a shark sighting or report has been received at the WPCC, it is disseminated by SMS to relevant people including the Media Liaison Officer and operational staff responsible for actions under this plan.

The next page is the Shark Sighting Report Template.

The template page should be removed and photocopied in order that information can be recorded and filed appropriately.

4. Shark Sighting Report Template

Recording Officer Details	
Name (of officer taking report)	
Date and time of report	
Report to DoF received from	<input type="checkbox"/> Public <input type="checkbox"/> Media <input type="checkbox"/> Police <input type="checkbox"/> Other

Report Details	
Name (reported by)	
Phone or other contact details	
Address (Optional)	
Date and Time of sighting/incident	
Location details	
Description of shark	
Other details E.g., what happened	
Other witnesses E.g., Names and contact info.	
Other people notified. E.g., Police, Surf Life Saving, LGA	

DoF internal actions	
Notes on actions taken. E.g., phone calls, confirmation with other witnesses, discussions with Agencies	

Media Response	
Media response taken Provide relevant details and attach copies of any media release issued	<input type="checkbox"/> None – log and file Media release by: <input type="checkbox"/> SLSWA <input type="checkbox"/> Police <input type="checkbox"/> Other <input type="checkbox"/> Media release by DoF <input type="checkbox"/> Other
Justification. Explanatory notes clarifying reason for decision to issue / not to issue media release.	

4.1 Media Response to Sightings

As per the DoF Media Policy (refer to FishInfo): 'all Department of Fisheries contact with the media, or the handling of media enquiries, should be conducted by, or coordinated through the Senior Public Relations Coordinator' (read 'Media Liaison Officer' for the purposes of this document).

ALL media queries, releases and statements related to shark sightings and incidents must be referred to the **Media Liaison Officer**.

DoF staff that are approached directly by the Media, must refer calls to the Media Liaison Officer, unless previous arrangements have been made. This will help to reduce the time that staff (e.g. research scientists) spend dealing with general media queries and ensure consistency and control over information being released. The Media Liaison Officer may contact Policy and Research Staff to assist with media and PR material.

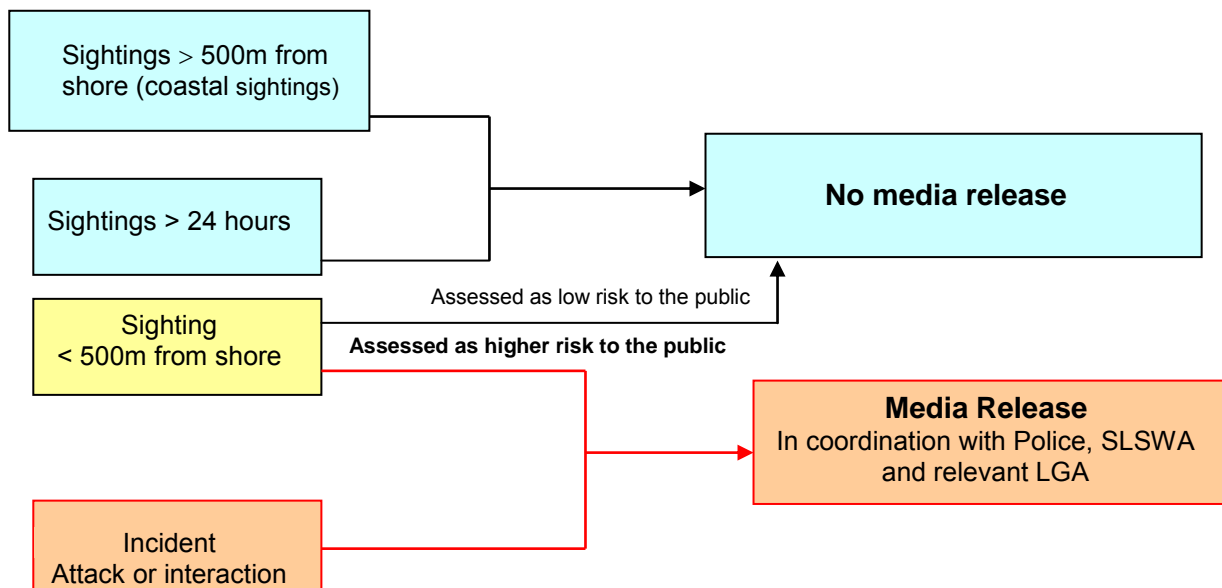
The focus of DoF media releases should be in relation to shark biology and technical information/expertise. Media statements will be developed by the Media Liaison Officer in liaison with the Operations Manager and in consultation with the WA Police, SLSWA and the relevant LGA's.

Media releases will be issued by the most relevant agency, depending on the specific circumstances of the sighting/incident.

In the event of a serious incident, guidance must be sought from the WA Police as to what information can be released in media statements.

When to issue a media release

The following is a **guide** to shark sighting related media releases initiated by DoF. In all situations Operation Managers should assess each sighting or interaction on a case-by-case basis and take action according to the potential threat to human life.



The Operations Manager will deal with sightings in rivers or estuaries on a case-by-case basis, taking into account the information to hand and the potential threat to human life.

5. Roles and Responsibilities

5.1 Role of Department of Fisheries Staff

5.1.1 CEO / DRS

Role:

Holds ultimate responsibility for the Departmental response to a shark incident.

Responsibilities:

- Liaises with the Operations Manager to determine the appropriate response to an incident; and
- Approves Department Response Statement and all DoF, joint or Ministerial media releases.

5.1.2 Operations Manager

Role:

Coordinates and manages the DoF field components of the response to an incident.

Responsibilities:

- Undertake an operational assessment of all sightings;
- Advise the CEO and/or DRS immediately if an incident or serious incident occurs;
- Liaise with the CEO and/or DRS to determine Departmental response to an incident;
- Advise Media Liaison Officer if a media release is required;
- Obtain approvals from CEO / DRS as required;
- Liaise with WA Police, SLSWA, LGAs and DoF Officers on operational responses;
- Liaise with Media Liaison Officer and Research Staff as required;
- Delegate tasks and ensure tasks are completed according to time frames;
- In consultation with the Media Liaison Officer, identify all other groups and agencies with a role in the response and establish communication links;
- Provide regular updates to CEO & DRS, Media Liaison Officer, DoF Staff, Ministerial Staff (or delegate responsibility to Media Liaison Officer).
- Document the response to a sighting/incident on operational assessment/running sheet.

5.1.3 Media Liaison Officer

Role:

Coordinates DoF public and media response to sightings and incidents and is the main contact point for all external communications.

Responsibilities:

- Notify Police of any new sightings;
- Liaise with Operations Manager, Research Staff and Policy Coordinator as required;
- Develop and distribute a media release if instructed to do so by the Operations Manager;
- Establish communication links with all involved organisations or agencies (eg Police, SLSWA & LGA) following an incident;
- Liaise with Police, SLSWA and other relevant parties on media releases;
- Develop and update as required, a Department Response Statement which will be used consistently to ensure a uniform message is delivered to all parties;
- Obtain approval from CEO or DRS for all Department Response Statements and media releases, including Ministerial media releases;
- Consider informing operational people who are close to the media of the current media position;
- If media spokespeople are not available, conduct factual interviews/radio bulletin updates; and
- Liaise with Operations Manager to provide regular updates to DoF and Ministerial Staff.

5.1.4 Media Spokesperson

Role:

Responds to media and delivers Department Response Statements.

Responsibilities:

- Talk to media, undertake interviews and answer media queries about the incident;
- Be available at all times during & following an incident via office, home and mobile phones; and
- Maintain ongoing and regular liaison with the Media Liaison Officer and the Operations Manager.

5.1.5 Research Representative

Role:

Provides scientific and research advice.

Responsibilities:

- Talk to media, undertake interviews and answer media queries about the incident;
- Provide advice to the Media Liaison Officer and Operations Manager; and
- Advise on data and sample collection if required.

5.1.6 Field Officers

Role:

Provides assistance during sightings and incidents, under the direction of the Operations Manager.

Responsibilities

- Advise WA Police immediately upon any sighting;
- Undertake duties as designated by the Operations Manager; and
- Participate in tagging sharks if/when the opportunity arises.

5.1.7 Alerting Officer

Role:

The Alerting Officer can be any DoF Officer who has had an incident reported to him/her from a member of the public.

Responsibilities:

- ❑ Take report details from member of the public. See [Shark Sighting Report Template](#) (Section 4);
- ❑ Notify Local Police;
- ❑ Notify the Operations Manager (relevant Regional Manager)
- ❑ Notify Media Liaison Officer of the incident details. If media liaison is not available the Policy Coordinator may be contacted. See [Schedule 1](#) for contact details
- ❑ Notify Local Shire and SLSWA.

5.2 Role of other Organisations and Departments

5.2.1 The WA Police

The WA Police is the Hazard Management Authority (HMA) for sea search and rescue (SAR) in Western Australia. The Water Police has a function at the WPCC to receive calls and coordinate SAR.

SAR operations are undertaken in conjunction with FESA Marine Volunteers, DOT, SLSWA and LGAs. As shark sightings and incidents are not recognised under the State Emergency Management arrangements, there is no formal HMA. The Water Police are the only agency mentioned in this plan to have a dedicated emergency coordination centre that is manned around the clock. It is the central point of contact for all shark sightings and incidents.

In all incidents, the WPCC will act as the first point of call and initiate the first response. If the incident escalates into a serious incident, the WA Police will act as the lead agency relative to their responsibilities pursuant to the Coroner's Act.

Police procedures require that regional Police notify Water Police in the event of an incident as a matter of course. In the regions, the local Police Station may be the main point of contact unless deemed otherwise. Once WPCC has been contacted, they will contact DoF as per the Metro incident management procedures.

If any measures are taken in response to a sighting or attack, it is important to ensure that those involved, acknowledge the protected status of the white shark (see DoF Policy Statement).

5.2.2 Surf Life Saving WA and Local Government Authorities.

SLSWA and LGAs are responsible for beach patrols and beach safety and will sound beach alarms, clear the water and close beaches if required, following a shark sighting or incident.

SLSWA also has statewide standard operating procedures for shark sightings, including guidelines on when to clear the water and close a beach and how long a beach should remain closed.

LGAs will clear the water and close the beaches if required, following a sighting or incident. Standardised beach closure signs will be deployed by LGAs, if beaches are closed following shark sightings/incidents.

6. DoF Operational Procedures

6.1 Field Operations

In the event of a sighting, the Operations Manager will undertake an operational assessment and decide whether a media release or an operational response is required.

The Operations Manager will instruct the Media Liaison Officer to develop and issue a media release if required.

In the event of an incident (such as an attack) the Operations Manager will liaise with the DRS and CEO to determine the appropriate action.

The Operations Manager will coordinate the DoF field response and liaise closely with WA Police, SLSWA, LGAs and relevant DoF staff (eg Research staff and the Media Liaison Officer) as required.

Depending on the circumstances, it may be appropriate for the Operations Manager to attend the location of the sighting/incident, in order to coordinate operations and provide advice to other agencies, or delegate a representative (eg relevant Compliance Manager) to attend.

The Operations Manager shall keep relevant DoF and Ministerial staff updated regarding the incident (or delegate the responsibility to the Media Liaison Officer).

The Operations Manager will document the operational assessment of each sighting and details of any response on the Shark Sighting/Incident Operational Assessment/Running Sheet at Schedule 2.

6.2 Media Communications

The Media Liaison Officer, in liaison with the Operations Manager, will be responsible for handling the DoF response to the media and general public and will develop media releases when instructed to do so by the Operations Manager.

Following an incident, the Media Liaison Officer will make formal contact with the WA Police, SLSWA and the relevant LGA and develop a communication link.

The Media Liaison Officer will prepare media releases in consultation with the Police, SLSWA and/or regional LGA's, as required. All DoF, joint or Ministerial media releases will be approved by the CEO or DRS and will be given priority over other work.

The Operations Manager and other field personnel who are close to the media should seek instruction from the Media Liaison Officer regarding the response to media interactions.

One or two designated Media Spokespeople will be appointed to talk to media about the incident, undertake interviews and answer media queries. The CEO may also act as an additional spokesperson if required.

The Operations Manager should ensure that no media are given access to DoF patrol boats.

6.3 Public relations

A shark incident may generate community interest and a large number of telephone calls to the Department from members of the public wishing to express their opinion or make general enquiries.

The Operations Manager, in coordination with the Media Liaison Officer, should ensure that a plan to deal with calls is determined and implemented in line with the following procedures:

- Prepare a standard response to be used by all persons dealing with public enquiries, including DoF Reception;
- Brief DoF Reception on the incident and instruct them on what to say;
- Ensure that a Media Statement about the incident has been posted on the DoF website; and
- If required, activate the 1800 Shark Information Line.

7. Schedule 1: Telephone Contacts

7.1 Department of Fisheries - Key Contacts

Operations Manager *Primary contact for incidents and field operations.*

Media Liaison Officer *Primary contact for all queries, sightings and incidents.*

Policy Coordinator *Secondary contact for queries and sightings.*

Response Role	DoF Position	Identity	Contact Details
DoF Management	Chief Executive Officer (CEO)	Mr Stuart Smith	Office: 9482 7322
	Director Regional Services (DRS)	Mr Bruno Mezzatesta	Office: 9482 7339 Mob. 0413 132 782
Media Liaison	Media Liaison Officer	Mr Ashley Malone	Office: 9203 0357 Mob: 0418 901 767
Policy Coordinator	Manager Strategic Compliance	Ms Tina Thorne	Office: 9432 8009 Mob. 0419 963 469
Regional Managers <i>(Assume the role of Operation Managers)</i>	A/Regional Manager, Southern Regional Office (Albany)	Mr Mike Burgess	Office: 9845 7400 Mob: 0407 417 831
	Regional Manager, Midwest Regional Office (Geraldton)	Mr Ron Shepherd	Office: 9921 6800 Mob. 0409 570 235
	Regional Manager, Gascoyne Regional Office (Carnarvon)	Mr Kieth Van Dongen	Office: 9941 1185 Mob. 0409 107 242
	Regional Manager, Northern Regional Office (Broome)	Mr Peter Godfrey	Office: 9193 8600 Mob: 0429 671 729
Compliance Managers	A/Compliance Manager, Southern District Office (Busselton)	Mr Steve Embling	Office: 9752 2152 Mob:0419 925 375
	A/Compliance Manager, Midwest Regional Office (Geraldton)	Mr Bob Bogumil	Office: 9921 6800 Mob. 0427 216 800
	A/Compliance Manager, Gascoyne Regional Office (Exmouth)	Mr Graeme Meinema	Office: 9949 2755 Mob. 0418 918 735
	Compliance Manager, Northern Regional Office (Broome)	Mr Stuart McDowall	Office: 9193 8600 Mob. 0418 941 507
Fisheries Patrol Vessels		PV Houtman	0011 870 773 200 359
		PV Walcott	Mob: 0447 968 273
Research Representatives	Supervising Scientist, Finfish	Dr Brett Molony	Office: 9203 0214 Mob: 0434 187 122
	Director, Research Division	Dr Rick Fletcher	Office: 9203 0114 Mob: 0418 884 236
Office of Minister for Fisheries	Chief of Staff	Mr Trevor Whittington	9422 3000
	Media Liaison Officer	Mrs Jean Stewart	9422 3000
	Ministerial Advisor	Mr Tim Nicholas	9422 3000 Mob: 0434 322 139
Regional Police.	Administration	Police Headquarters	Office: 9222 1111
	Water Police Coordination Centre	North Fremantle	Office: 9442 8600

7.2 Departments and Organisations - Key Contacts

Agency	Position	Identity	email	Telephone	Fax
Shark Hazard Committee	Chair	Mr Bruno Mezzatesta	Bruno.Mezzatesta@fish.wa.gov.au	Office 9482 7339 Mob. 0413 132 782	9432 8060
	Executive Support Officer	Ms Barbara Sheridan	Barbara.Sheridan@fish.wa.gov.au	Office 9432 8046	
Western Australian Police	Water Police Coordination Centre	Ops Manager OIC Coordination Centre	water.police.fremantle@police.wa.gov.au	9442 8600 9442 8601 9442 8606	9442 8615
Surf Life Saving WA	Beach Services Coordinator	Mr Chris Peck	cpeck@mybeach.com.au	Office 9244 1222 Mob. 0403 240 775	9244 1225
		Mr Matt du Plessis	mduplessis@mybeach.com.au	Office 9244 1222 Mob. 0403 240 777	
Dept. of Fisheries	Manager Metropolitan Region	Mr Tony Cappelluti	Tony.Cappelluti@fish.wa.gov.au	Office 9432 8006 Mob. 0409 206 850	9432 8060
	Media Liaison	Mr Ashley Malone	Ashley.malone@fish.wa.gov.au	Office 9203 0357 Mob. 0418 901 767	9203 0399
DEC	Chief Wildlife Officer	Mr Dave Mell	David.Mell@dec.wa.gov.au	Office. 9334 0429 Mob. 041 993 8752	9334 0295
	Supervising Wildlife Officer	Mr Doug Coughran	Douglas.Coughran@dec.wa.gov.au	Wk. 9334 0339 Mob. 0419947708	

SHIRE	Coastal Municipality	Telephone	Fax
Administration/ Switchboard	Albany	9841 9333	9841 4099
	Ashburton	9188 4444	9189 2252
	Augusta-Margaret River	9780 5255	9757 2512
	Broome	9191 3456	9191 3455
	Bunbury	9792 7000	9792 7184
	Busselton	9781 0444	9752 4958
	Capel	9727 2030	9727 0223
	Carnamah	9951 7000	9951 1377
	Carnarvon	9941 0000	9941 0099
	Chapman Valley	9920 5011	9920 5155
	Christmas Island	9164 8300	9164 8304
	Cocos (Keeling Islands)	9162 6649	9162 6668
	Coorow	9952 0100	9952 1173
	Dandaragan	9651 4010	9651 4057
	Denmark	9848 0300	9848 1985
	Derby-West Kimberley	9191 0999	9191 0998
	Dundas	9039 1205	9039 1359
	Esperance	9071 0666	9071 0600
	Exmouth	9949 3000	9949 1277
	Geraldton	9956 6600	9956 6674
	Gingin	9575 2211	9575 2121
	Greenough	9956 6600	9956 6674
	Harvey	9729 0300	9729 2053
	Irwin	9927 0000	9927 1453
	Jerramungup	9835 1022	9835 1161
	Manjimup	9771 7777	9771 7771
	Nannup	9756 1018	9756 1275
	Northampton	9934 1202	9934 1072
	Port Hedland	9158 9300	9173 1766
	Ravensthorpe	9839 0000	9838 1282
	Roebourne	9186 8555	9185 1626
	Shark Bay	9948 1218	9948 1237
	Waroona	9733 7800	9733 1883
Wyndham-East Kimberley	9168 4100	9168 1798	

