REEF LIFE SURVEY FOUNDATION ANNUAL REPORT



REEF LIFE SURVEY FOUNDATION INCORPORATED

2016/17 ANNUAL REPORT

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This report was designed and compiled by Antonia Cooper and Ella Clausius.

Images: Rick Stuart-Smith, John Turnbull, Antonia Cooper, Amanda Richley, Joe Shields, Graham Edgar.

Map: Free Vector Maps, http://freevectormaps.com

The Reef Life Survey Foundation is a non-profit environmental organisation. Donations to the RLSF are tax-deductible and support ongoing monitoring of the marine environment around Australia.

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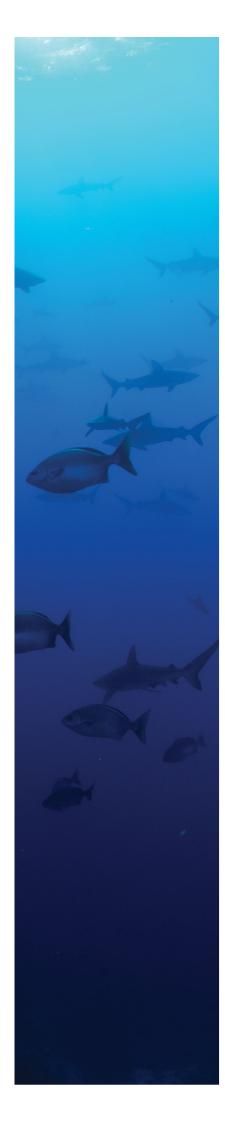
VISION

Improved knowledge & condition of reef systems



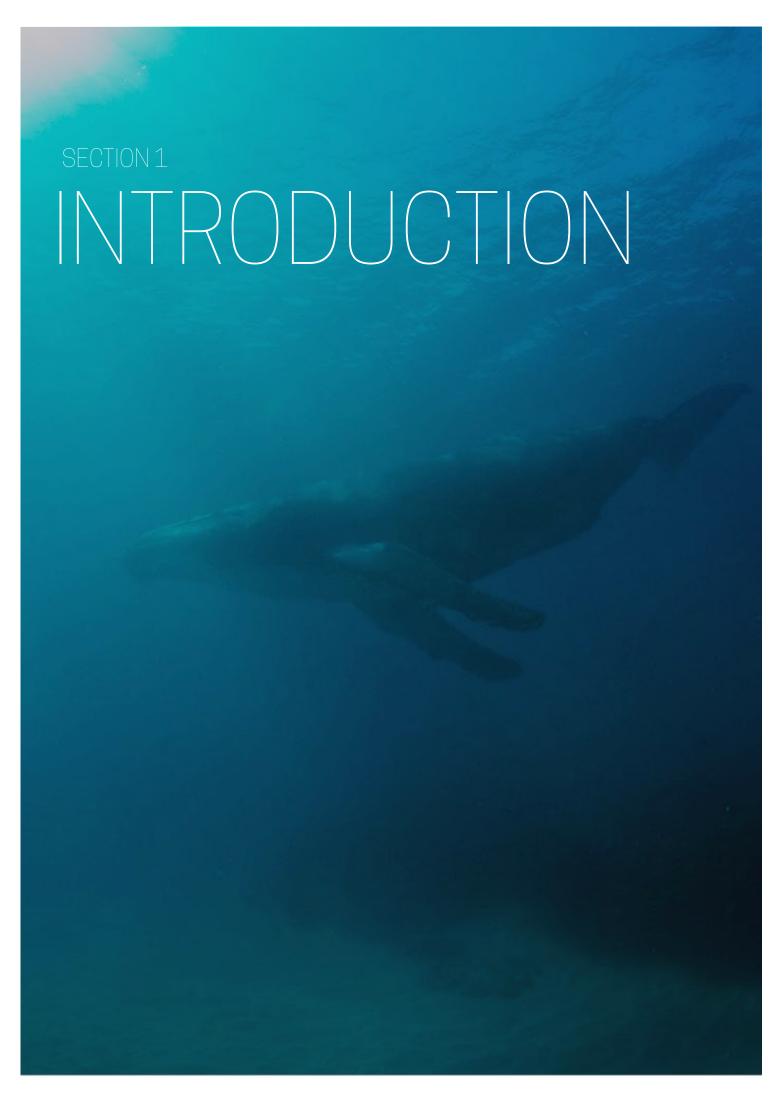


To inspire & engage a global volunteer community to survey reefs using scientific methods, and share knowledge about the marine ecosystem



CONTENTS

| 1 | SECTION 1: INTRODUCTION |
|----|--|
| 2 | RLSF Board Members |
| 3 | Advisory Committee |
| 4 | President's Report |
| | |
| 5 | SECTION 2: THE IAN POTTER FOUNDATION SUPPORT |
| 6 | The IPF Funded Project |
| 7 | Global Online Species Database |
| 8 | Website Engagement |
| 9 | Social Media Communications |
| 10 | 2016/17 Field Activities |
| | |
| 12 | SECTION 3: 2016/17 AT A GLANCE |
| 16 | The Story So Far |
| 17 | Word from the Managers |
| 19 | Publications |
| 20 | Scoresby Shepherd Awards |
| | |
| 21 | SECTION 4: FINANCIAL REPORT |
| 23 | RLSF Financial Overview |
| 24 | RLSF Incorporated Finances |
| 25 | RLSF Marine Public Fund Finances |
| | |
| 26 | SECTION 5: SUPPORT |
| | |



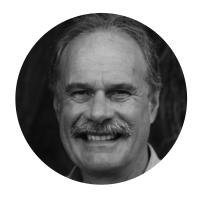




Prof Graham Edgar President



Dr Rick Stuart-Smith Executive Officer



Peter Mooney Management Representative



Margo Smith Community Diver Representative



RLSF activities are directed by a committed and active Advisory Committee. Committee members participate on a voluntary basis and enable RLSF to contribute information on marine biodiversity where it is most needed.

NEVILLE BARRETT Institute for Marine & Antarctic Studies, TAS

DANNY BROCK Department of Environment, Water & Natural Resources, SA

PAUL DAY West Australian Divers for Diversity Inc., WA

GRAHAM EDGAR Institute for Marine & Antarctic Studies, TAS

ANDREW GREEN Nature Coast Marine Group, NSW

TOM HOLMES Department of Parks & Wildlife, WA

STEFFAN HOWE Parks Victoria, VIC

BRYAN MCDONALD Department of Primary Industry & Fisheries, NT

PETER MOONEY Parks & Wildlife Service, TAS

NATHAN KNOTT Department of Primary Industries, NSW

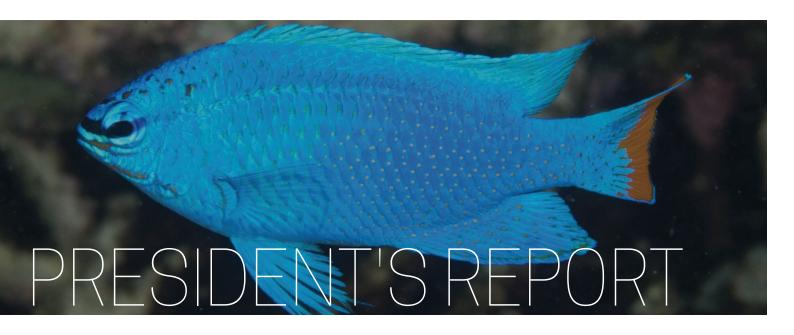
AMANDA RICHLEY Parks Australia, Commonwealth

IAN SHAW Solitary Islands Underwater Research Group, NSW

MARGO SMITH Combined Hunter Underwater Group, NSW

RICK STUART-SMITH Institute for Marine & Antarctic Studies, TAS

JOHN TURNBULL Underwater Research Group of New South Wales, NSW



Reef Life Survey activities expanded considerably over the past year, including a full field program. Survey weekends were held at our core monitoring locations in six states, plus longer survey trips at Ningaloo and Wilsons Promontory, and 4 months of Eviota surveys in the Coral Sea and Great Barrier Reef. We have now passed our 10,000th survey, and the number of countries has expanded to 51.

One notable consequence during the year is that data collected by RLS divers provided the main basis of the 2016 Australian State of the Environment Report for Coasts and Marine chapters, highlighting the importance that managers place on everyone's efforts. All RLS divers participating in surveys deserve unreserved thanks for collecting and entering their data, which has ultimately assisted managers and made improved environmental outcomes possible.

The highlight of the past year for me has been the release of the online RLS guide to marine species. Although I am, of course, biased, I think it is fair to say that this is the best marine life guide existing, with numerous features not available elsewhere. These include a tool for sorting species lists by likelihood of sighting for any region worldwide, adding images to these lists so that traveling divers can quickly see the species most likely to be encountered,

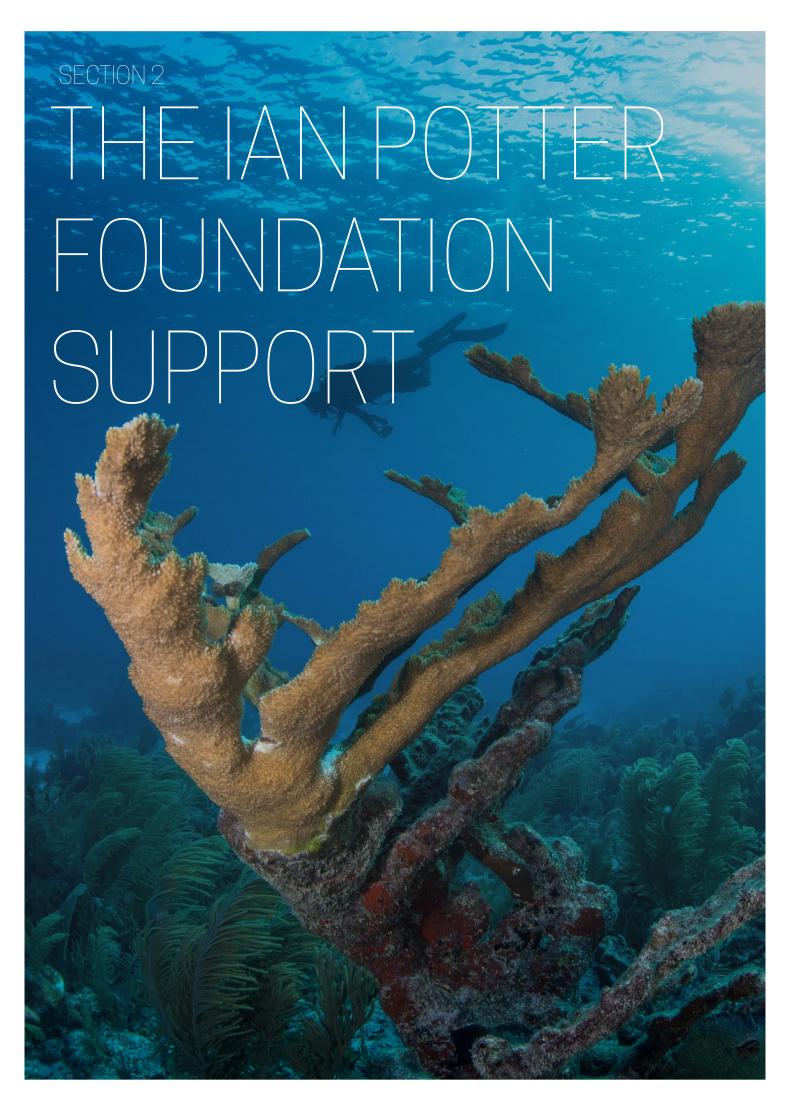
randomised flashcards for learning species in a new area, and information on the rarity of species (as observed by RLS divers on transects in the region). Usage of our RLS website is rapidly accelerating as a consequence of the guide. Many thanks to Rick, Yanir Seroussi, John Anderson and Sumit Gupta, in particular, for making the website so informative and such a pleasure to use.

The cast of other contributors who additionally need thanking for making Reef Life Survey such a success is as broad as ever. Derek Shields – last year's Scoresby Shepherd Award winner – contributed again in leading Eviota on multiple trips off the coast of Queensland, including safely negotiating Cyclone Debbie; the Advisory Committee and Board Members again provided outstanding guidance; and Toni, Rick, Just Berkhout and Lauren Trebilco kept the office engine ticking along as efficiently as ever.

I'm looking forward to catching up with all members at our 10 year celebratory survey weekends at Port Stephens and Rottnest Island in 2018. Hopefully see you then.

Graham Edgar

President RLSF





The Ian Potter Foundation (IPF) grant for "Improved public knowledge and conservation of the marine environment through the Reef Life Survey Foundation" has provided a pivotal step forward for RLS in the last two years. Now in its final stages, we reflect on a few of the key avenues the IPF grant has supported the growth and success of the RLS program.

WEBSITE

The IPF grant allowed a substantial revamp of the RLS website, including the addition of the new Reef Species of the World global online species database (see pp 7 & 8).

COMMUNICATIONS

A communications plan was developed and activated, with new funding applications, newsletters, enhanced social media activity and other public products and initiatives designed to raise the profile of RLS and help us to improve marine biodiversity literacy in Australia (see pg 9).

EXTENSION OF FIFI D ACTIVITIES

Surveys of all of the core monitoring locations around Australia were able to be continued over the last two years through the support of the IPF (and other partners), allowing tracking

of reef conditions to extend up to 10 years at some locations. The IPF also supported resurveys of the Great Barrier Reef and Coral Sea following the devastating 2016 mass coral bleaching event (see pg 10 & 11).

PHILANTHROPY AUSTRALIA

As a result of The Ian Potter Foundation's capacity-building grant, in April 2017 Philanthropy Australia awarded the Ian Potter Foundation with the Environmental Philanthropy Award for the Reef Life Survey project.

The lan Potter Foundation received the award for significant achievements and outstanding grant-making in the past five years, displayed through investing in projects or organisations that improve the conservation and functioning of Australia's environment.



A major part of the transformation of the RLS website under the IPF grant has involved the development and launch of the online Reef Species of the World database.

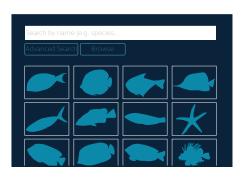
Drawing on an ever-expanding database of photos of reef species in their natural habitat, often across various life stages, as well as location records from RLS surveys, the Species Pages provide what is likely the most comprehensive global online field guide to reef species in the world.

Users of the Reef Species of the World database can search for over 4,400

species found on reefs around the world by location and/or by taxonomic group and view a range of species information including species descriptions, size range, habitat type and abundance and occurrence rates on RLS surveys. The database can also be used to compare up to 4 species' profiles side-by-side to allow for a direct comparison of similar species.

The database is updated with every new species or occurrence location added to the RLS database, so will continually grow as RLS expands.

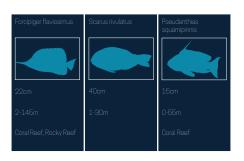
4,400+SPECIES PROFILES



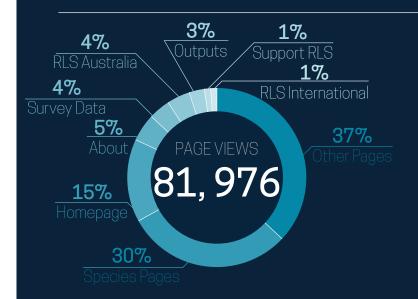
ECOLOGICAL & GEOGRAPHICAL INFORMATION



SIDE-BY-SIDE COMPARISON FOR UP TO 4 SPECIES



WEBSITE ENGAGEMENT







56%
Increase in
SESSIONS/DAY
compared to 2015/16
financial year





5,144

SOCIAL MEDIA COMMUNICATIONS



139%
Increase in the number of interactions people had with RLS content compared to 2015/16

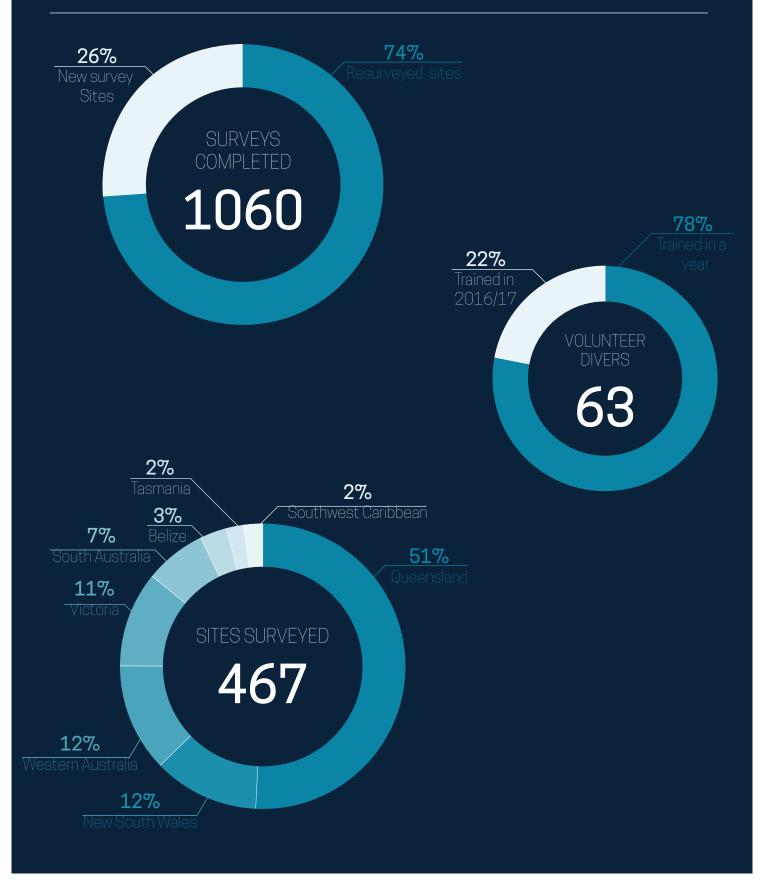
98%
Increase in the number of people who saw
RLS content compared to 2015/16





90%
Increase in the number of times RLS content was displayed compared to 2015/16

2016/17 FIELD ACTIVITIES

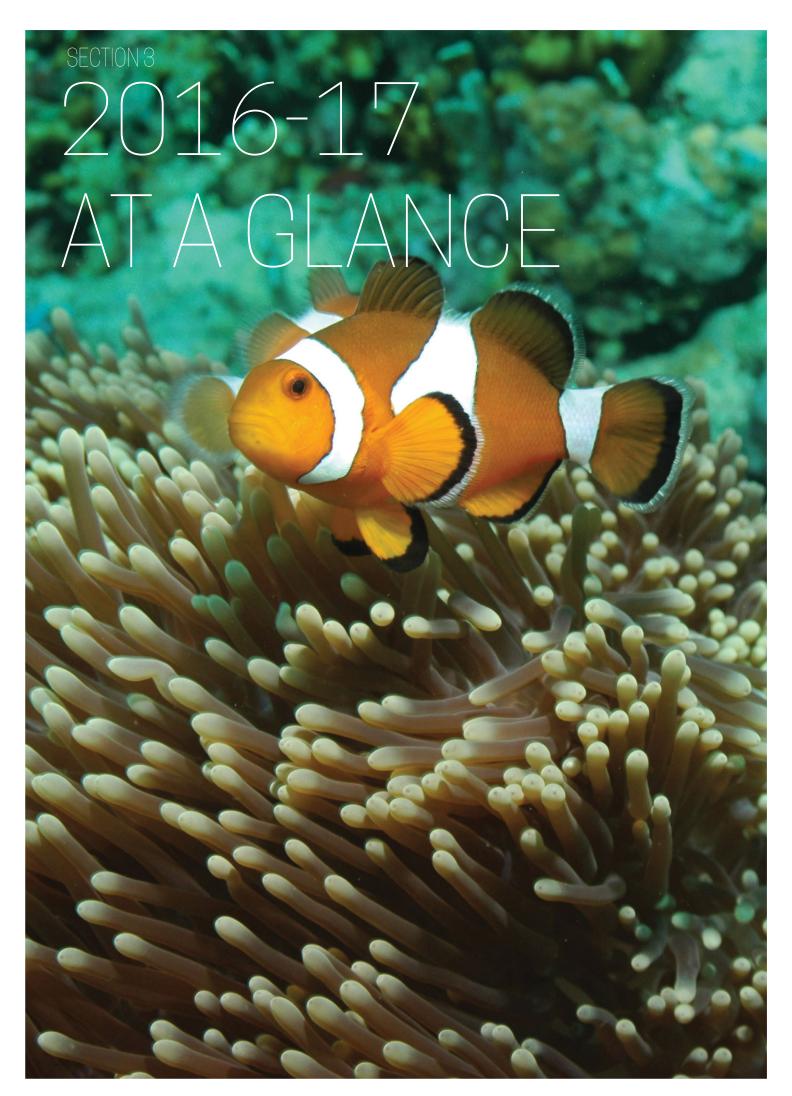


2016/17 ACTIVITIES BREAKDOWN

Western Australia D Queensland 148 11 55 D 240 477 **AU New South Wales** D 24 57 130 South Australia D Victoria 11 33 129 D Tasmania 17 51 111 10 26 11



divers



10,000TH SURVEY ADDED TO THE RLS DATABASE

Representing over 72,000 hours

&

\$2.2m* worth of in-kind volunteer contributions.

*Based on \$30/hour in AUS





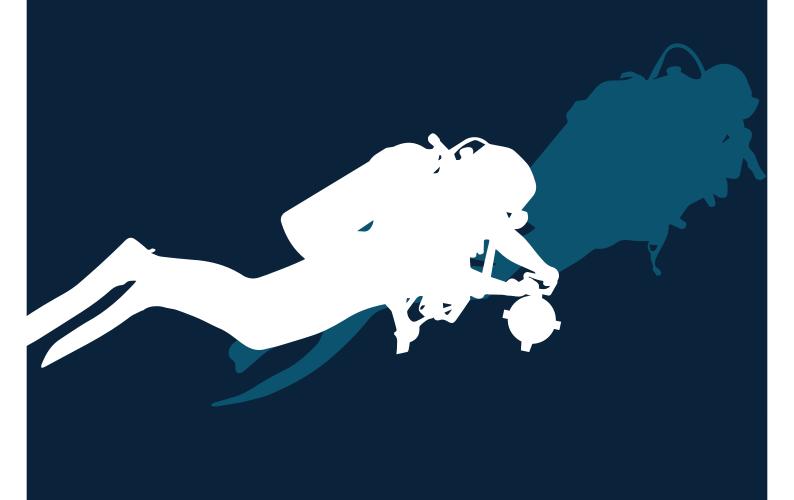
SURVEYS RECORDED IN THE 50TH COUNTRY

Surveys conducted in MOrocco were added to the database in 2016/17, representing the 50th country surveyed by RLS divers.

8 NEWRLSTRAINERS

While the small number of RLS trainers has been important for maintaining consistency & high quality in the RLS data collected by divers around the world, it has also been one of the factors limiting continued growth of the program, both in Australia and overseas

Over the last year, 8 experienced RLS members undertook a specialised course to become certified RLS trainers, equipping them with the skills necessary to train new RLS members in the future and to continue to maintain the high standards set for RLS training & data collection.

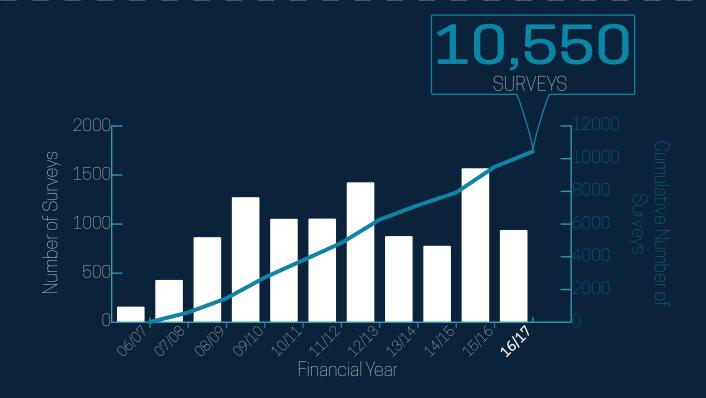


REEFLIFE SURVEY THE STORY SO FAR



Surveys in 51 COUNTRIES





5,291
Download
Events

From Global Biodiversity Information Facility & Atlas of Living Australia 16.5 MILLION

Animals
Observed, Sized & Recorded





Scientific Papers

Management Reports published using RLS data



PARKS AUSTRALIA, Amanda Richley

Australian Marine Parks (AMPs) have been established to protect biodiversity while providing opportunities for sustainable use and enjoyment.

They cover just over a third of Australia's waters (approximately 3.3 million km²) and are generally offshore from 3 nautical miles and extending up to 200 nautical miles from the Australia coastline. They contain a wide range of marine life and habitats, including shallow tropical and temperate reefs, with diveable reefs in the Temperate East, Coral Sea, North, North-west and South-west networks.

RLS Volunteers have been conducting surveys in Australian Marine Parks (formerly called Commonwealth Marine Reserves) since 2008. So far, 3,152 transects have been surveyed at 1,666 sites (see map) inside and in areas surrounding Australian Marine Parks. For some of these locations, these are the only ecological surveys that have ever been done.

In 2016-17, analysis of all the data in AMPs revealed a number of trends across tropical, subtropical and temperate reefs. Some of the key ones include:

•The community of fishes and invertebrates in the Coral Sea Marine Park is more similar to that found in oceanic Pacific Islands than the Great Barrier Reef. Coral cover varies, with the highest coral cover found in Southern reefs. The Coral Sea Marine Park reefs are a hotspot



Reefs surveyed by RLS around Australia. Sites surveyed inside Australian Marine Parks are shown in red.

for reef sharks, with higher numbers here than sighted at most locations around the world. The highly protected reefs at Coringa-Herald and Lihou supported around 70% more fish biomass than reefs that are open to fishing.

- •In the North Network of Australian Marine Parks, where active management hasn't yet begun, most of the reefs inside the marine parks were similar in biodiversity to the reefs outside the parks. The North Network reefs differed substantially from Northwest Network parks and Coral Sea tropical sites, with distinctive biota.
- •Both the Cod Grounds and Solitary Islands Marine Parks (Pimpernel Rock) have unique fish and benthic communities compared to other nearby locations surveyed. This is probably due to these Marine Parks including pinnacles rising steeply from the seabed; striking features that



attract fishes and create different habitats.

- •Reefs within Norfolk and Lord Howe Marine Parks were unique on a national scale. While Norfolk Island Marine Park was similar to Lord Howe, it has fewer tropical species.
- •In the Leeuwin ecoregion, the Geographe Marine Park had higher diversity of reef organisms than nearby coastal sites, and included different species of fish usually found on deeper reefs.

This research is an example of citizen science through Reef Life Survey working in partnership with government and research agencies including Parks Australia, the University of Tasmania and the National Environmental Science Program Marine Biodiversity Hub to provide scientific information that is meaningful and useful to managers of marine parks.

Parks Australia would like to thank all RLS divers that have contributed to the data sets in these marine parks – without you we wouldn't have this knowledge of our marine parks!

PARKS VICTORIA, Steffan Howe

Reef Life Survey (RLS) volunteers have been implementing surveys in the Victoria marine national parks and sanctuaries for the last 9 years.

These surveys have been implemented either through Parks Victoria coordinated activities such as the recent surveys in Wilsons Promontory Marine National Park or delivered as part of the broader RLS citizen science program where the data has been made available to Parks Victoria.

Because the RLS methods are the same methods that have been used by marine scientists for decades, and volunteer divers are handpicked and highly skilled in marine species identification, the RLS program is able to provide very high quality monitoring data for the parks.

The RLS program aligns with Parks Victoria's Healthy Parks Healthy People principles and also with a number of the themes in Parks Victoria's 'Shaping Our Future' strategy, including "Connecting People and Parks", "Conserving Special Places", "Providing benefits beyond park boundaries" and "Enhancing organisational excellence".

The RLS program also aligns with the Parks Victoria's state-wide monitoring framework for the marine national parks and sanctuaries, which is closely linked to the conservation and management objectives for parks, and the data gives us valuable insights that help to support and inform effective management.



Bright spots among the world's coral reefs. Nature (2016).

Cinner, J.E., Huchery, C., MacNeil, M.A., Graham, N.A.J., McClanahan, T.R., Maina, J., Maire, E., Kittinger, J.N., Hicks, C.C., Mora, C., Allison, E.H., D'Agata, S., Hoey, A., Feary, D.A., Crowder, L., Williams, I.D., Kulbicki, M., Vigliola, L., Wantiez, L., Edgar, G., Stuart-Smith, R.D., Sandin, S.A., Green, A.L., Hardt, M.J., Beger, M., Friedlander, A., Campbell, S.J., Holmes, J.E., Wilson, S.K., Brokovich, E., Brooks, A.J., Cruz-Motta, J.J., Booth, D.J., Chabanet, P., Gough, C., Tupper, M., Ferse, S.C.A., Rashid Sumaila, U. & Mouillot, D.

New opportunities for conservation of handfishes (Family Brachionichthyidae) and other inconspicuous and threatened marine species through citizen science. Biological Conservation (2016)

Edgar, G.E., Stuart-Smith, R.D., Cooper, A., Jacques, M. & Valentine, J.

Consistent multi-level trophic effects of marine reserve protection across northern New Zealand.

PLoS ONE (2017)

Edgar, G.J., Stuart-Smith, R.D., Thomson, R.J. & Freeman, D.J.

Assessing national biodiversity trends for rocky and coral reefs through the integration of citizen science and scientific monitoring programs. BioScience (2017).

Stuart-Smith, R.D., Edgar, G.J., Barrett, N.S., Bates, A.E., Baker, S.C., Bax, N.J., Becerro, M.A., Berkhout, J., Blanchard, J.L., Brock, D.J., Clark, G.F., Cooper, A.T., Davis, T.R., Day, P.B., Duffy, J.E., Holmes, T.H., Howe, S.A., Jordan, A., Kininmonth, S., Knott, N.A., Lefcheck, J.S., Ling, S.D., Parr, A., Strain, E., Sweatman, H. & Thomson, R.



For outstanding voluntary contributions to Reef Life Survey.

THE SURVEY PRIZE

For the RLS member who contributed the greatest number of surveys during the year.

Andrew Green

Over the 2016/17 year, Andrew contributed a whopping 54 whole surveys to the RLS database from sites across the Great Barrier Reef, Whitsundays and Coral Sea, bringing Andrew's total RLS survey count up to 540!

lan Shaw & Kirsty Whitman also deserve honourable mentions for completing 40 & 37 whole surveys, respectively.

THE DISTINGUISHED CONTRIBUTION AWARD

For the RLS member who made the greatest voluntary contribution to the RLSF during the year by means other than surveys.

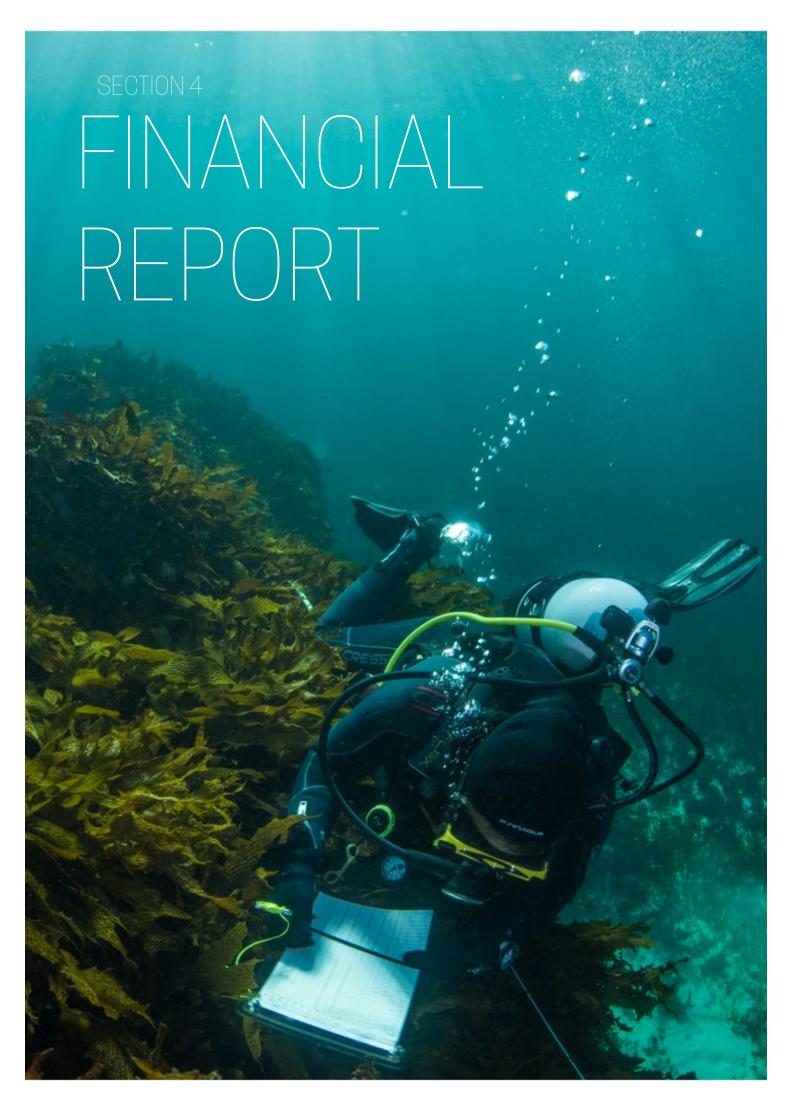
Paul Day

Paul Day is the recipient of the Distinguished Contribution Award for 2016/17, not only because of his logistical support during the Rottnest Island and Ningaloo survey trips this year, but for his outstanding support and commitment to RLS since 2008.

Kevin Smith, Ben Jones, Tom Davis, Nicola Davis & Don Love also deserve honourable mentions for their logistical support over the year.









Reef Life Survey would like to thank the following people for their financial support over the 2016/17 financial year.

Collen Morris has provided enormous voluntary support & much appreciated expertise to the financial record keeping of the RLSF.

Michael Müller has generously supported RLSF since the organisation's incorporation in 2010. RLSF sincerely thanks Michael for his invaluable accountancy advice & quality auditing services.

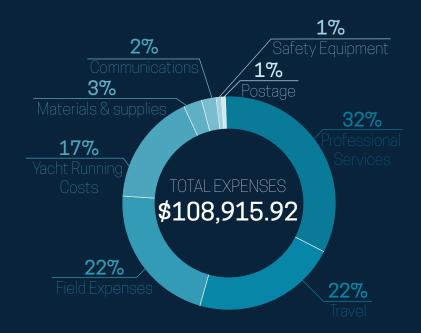
DONORS

Joyce Edgar
Trent McInerney, Rx Safety
Brett Williamson, Ocean
Photography Australia

RLSF FINANCIAL OVERVIEW

RLSF INCORPORATED¹

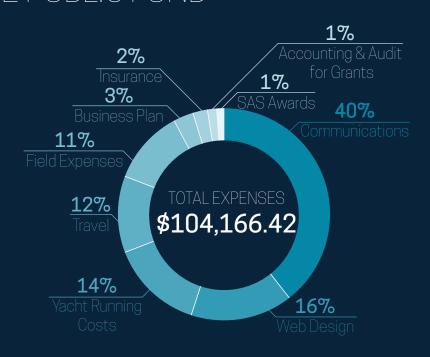




¹The general RLSF account

MARINE PUBLIC FUND²





 $^{
m P}$ The RLSF account through which donations are spent & received.

RLSFINCORPORATED FINANCES

| BUDGET CATEGORY | SUBCATEGORY | AMOUNT |
|------------------|------------------------------|-----------|
| Income | Membership Fees | \$345 |
| | Grants | \$75,150 |
| | Other Income/ Reimbursements | \$2312 |
| Total income | | \$77,807 |
| Expenses | Field Expenses | \$23,566 |
| | Communications | \$2201 |
| | Materials & Supplies | \$3235 |
| | Postage | \$552 |
| | Safety Equipment | \$1093 |
| | Professional Services | \$35,534 |
| | Yacht Running Costs | \$18,369 |
| | Travel | \$23,946 |
| | Web Design | \$419 |
| Total expenses | | \$108,915 |
| Operating profit | | -\$31,108 |

| BUDGET CATEGORY | SUBCATEGORY | AMOUNT |
|-----------------|-------------------|-----------|
| Equity Equity | Retained Earnings | \$103,804 |
| | Current Earnings | -\$41,909 |
| Total equity | | \$61,895 |

MARINE PUBLIC FUND FINANCES

| BUDGET CATEGORY | SUBCATEGORY | AMOUNT |
|-------------------|----------------------------------|-----------|
| Income | Donations | \$4,103 |
| | Other Income (wall calendar) | \$540 |
| Total income | | \$4,643 |
| Expenses | Accounting & Audit for grants | \$1,430 |
| | Field Expenses | \$11,923 |
| | Communications | \$41,310 |
| | Bank Fees | \$52 |
| | Scoresby Shepherd Award Payments | \$500 |
| | Business Plan | \$3,255 |
| | Insurance | \$2,320 |
| | Yacht Running Costs | \$14,838 |
| | Travel | \$12,215 |
| | Web Design | \$16,196 |
| | Safety Equipment | \$127 |
| Total expenses | | \$104,166 |
| Operating profit* | | -\$99,523 |

*Negative operating balance reflects costs attributable to the lan Potter Foundation project, where grant funding was received in 2015/16.

| Total equity | | \$136,680 |
|--------------|-------------------|-----------|
| | Current Earnings | -\$90,373 |
| Equity | Retained Earnings | \$227,053 |
| BUDGET CATEG | SORY SUBCATEGORY | AMOUNT |





A large number of supporting individuals, organisations & community groups contributed to the success of the Reef Life Survey program throughout 2016/17.

Major Partners

The Ian Potter Foundation John Anderson, Forte Web Design

Aquenal Pty Ltd. Michael Müller

Colleen Morris Parks Australia

Cradle Coast NRM Rottnest Island Authority

Institute for Marine & Antarctic Studies, Sumit Gupta, True Arrow Software University of Tasmania

Key Supporters

Antonia Cooper, RLS/IMAS

Combined Hunter Underwater Group

Department of Environment, Water & Natural

Resources, SA

Department of Biodiversity, Conservation &

Attractions, WA

Dr Emmett Duffy, MarineGEO, Smithsonian

Institute, USA

Dr Mikel Becerro, PNA-CSIC, Spain

Environment Protection Authority, SA

Friends of Beware Reef

Jemina Stuart-Smith, IMAS

Just Berkhout, IMAS

Justin Hulls, IMAS

Laurel Trebilco, IMAS

Nature Coast Marine Group

NSW Department of Primary Industries

Parks & Wildlife Service, TAS

Parks Victoria

PBD Consulting Ptd. Ltd.

Pieter van der Woude

Solitary Islands Underwater Research Group

Tasmanian Boat Charters

Underwater Explorers Club of Western Australia

Underwater Research Group of NSW

Western Australian Divers for Diversity Inc.

WA State NRM



The Reef Life Survey Foundation acknowledges the support from the 63 divers (Australian & international) who contributed their skills & expertise to the RLS program over the 2016/17 financial year.

Alan Wilkins Alicia McArdle Alicia Sutton Amanda Richley Amelia Fowles Andrew Green Antonia Cooper Ashley Smith Ben Jones Bill Barker Bob Edgar Caitlin Kuempel Carolina Garcia Caroline Mason Chris Gillies Daniel Brock Daniel lerodiaconou Debbie Dalziel Don Love

Eloise Ashworth

German Soler

Graham Edgar Grant Pearce Harriet Davies Ian Shaw James Brook Janina Seamann Jennifer Hoskin Jeremy Ward John Turnbull Jordan Logan Kate Fraser Kate Tinson Kevin Smith Kirsty Whitman Kris O'Keeffe Laurel Trebilco Louise de Beuzeville Margo Smith Martin Puchert Matthias Liffers Meryl Larkin

Michael Brooker Michael Goodison Neil Vaughan Nicola Davis Paul Carnell Paul Day Paul Jennings Paul Tinkler Rick Stuart-Smith Ross Whippo Sam Griffiths Sam Owen Scott Jones Scott Ling Simon Reeves Sonia Sagrista Sue Baker Tom Davis Wendy Hutchison Yanir Seroussi Zach Foltz

