

REEF LIFE SURVEY FOUNDATION

2018 ANNUAL REPORT





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RLSF 2018 ANNUAL REPORT

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

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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.

MISSION

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



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INTRODUCTION



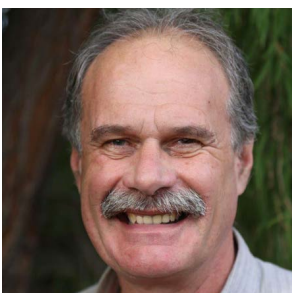
RLSF BOARD



GRAHAM EDGAR
President



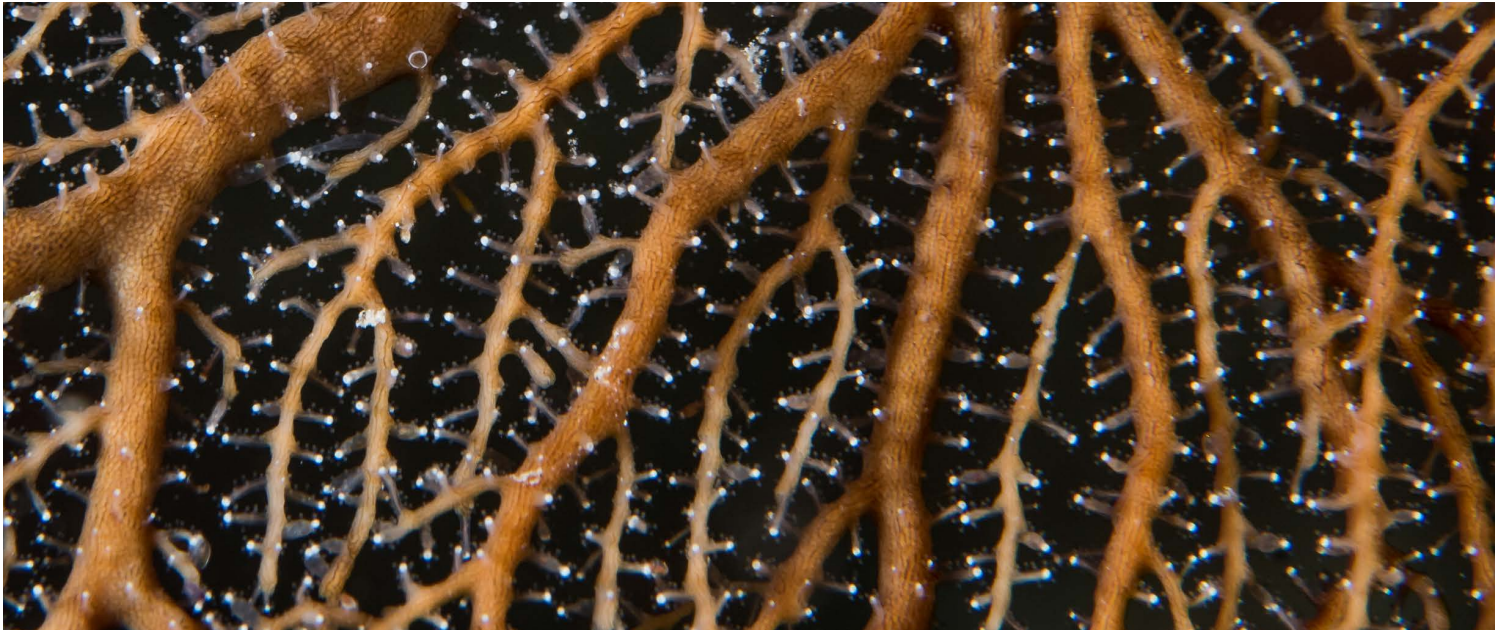
RICK STUART-SMITH
Executive Officer



PETER MOONEY
Management Representative



MARGO SMITH
Community Diver Representative



ADVISORY COMMITTEE

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 needed.

NEVILLE BARRETT

Institute for Marine & Antarctic Studies,
TAS

TOM HOLMES

Department of Biodiversity, Conservation
& Attractions, WA

IAN SHAW

Solitary Islands Underwater Research
Group, NSW

DANNY BROCK

Department of Environment, Water &
Natural Resources, SA

STEFFAN HOWE

Parks Victoria, VIC

MARGO SMITH

Combined Hunter Underwater Group,
NSW

PAUL DAY

West Australian Divers for Diversity Inc.,
WA

BRYAN MCDONALD

Department of Primary Industry &
Fisheries, NT

RICK STUART-SMITH

Institute for Marine & Antarctic Studies,
TAS

GRAHAM EDGAR

Institute for Marine & Antarctic Studies,
TAS

PETER MOONEY

Parks & Wildlife Service, TAS

JOHN TURNBULL

Underwater Research Group of New South
Wales, NSW

ANDREW GREEN

Nature Coast Marine Group, NSW

NATHAN KNOTT

Department of Primary Industries, NSW

AMANDA RICHLEY

Parks Australia, Commonwealth



PRESIDENT'S REPORT

Our 10th anniversary provides an opportunity to look back at the many achievements of Reef Life Survey over the past decade. I doubt any of us would have predicted the extent of future success when at the formative meetings in 2007.

The first achievement to mention is the camaraderie evident amongst our community of divers, as was clear during our anniversary dinners and dives. It is remarkable that about one-third of divers trained during initial boot camps are still participating today, with equal if not more enthusiasm.

Our success is clearly apparent in the data statistics, including over 11,500 underwater surveys completed at over 3,000 sites, with over 5,000 species recorded in 53 countries. More than 1 billion records of species abundance have been downloaded since 2016 through just one of our

three data access avenues (the Global Biodiversity Information Facility).

By distributing images associated with surveys, we have also increased public literacy about the structure and function of marine ecosystems, most notably through our new *Reef Species of the World* web page.

RLS survey data arguably now represent the most important scientific biodiversity dataset worldwide – terrestrial or marine – for standardised surveys of species abundance. All this survey information has provided a rich seam for scientific researchers to mine. A total of 56 scientific papers using RLS data have been published since 2014, including six papers in the most prestigious scientific Journal Nature. No other citizen science program worldwide comes close, other perhaps than eBird with its 40,000 contributors. The contributions of each RLS volunteer exceed

100 volunteers in other programs!

Following recommendations on priority activities from government managers on our Advisory Committee, the scientific outputs have translated to critical applied knowledge, and better management of our marine estate. This is ultimately what Reef Life Survey is about – improved environmental outcomes.

It's a terrific accomplishment from everyone. For me, it's also been a fantastic journey with a great bunch of people. We have already established the baseline of Australian marine biodiversity, an invaluable yardstick to accurately describe changing marine conditions through years to come. We should all look forward to an equally interesting next 10 years, to see where that will lead.

Graham Edgar, RLSF President



2017/18 IN REVIEW



CELEBRATING RLS' 10TH BIRTHDAY

In May, RLS celebrated its 10th birthday by coordinating two events, in Perth, WA, and Port Stephens, NSW, to acknowledge the work of our volunteers on our journey to date.

The celebrations were a great opportunity to highlight everything the entire RLS team has achieved over the past decade and to thank our members for their ongoing dedication and commitment.

The evenings were both great successes

with presentations from Graham Edgar, Rick Stuart-Smith, local managers and volunteer representatives, as well as some more light-hearted awards for our dedicated volunteers.

The RLS team would like to say a massive thank you to everyone who was involved in and attended our 10th Birthday celebrations, and to all of our dedicated members who have made, and continue to make, RLS the success that it has become!

RLS WEBSITE GROWTH

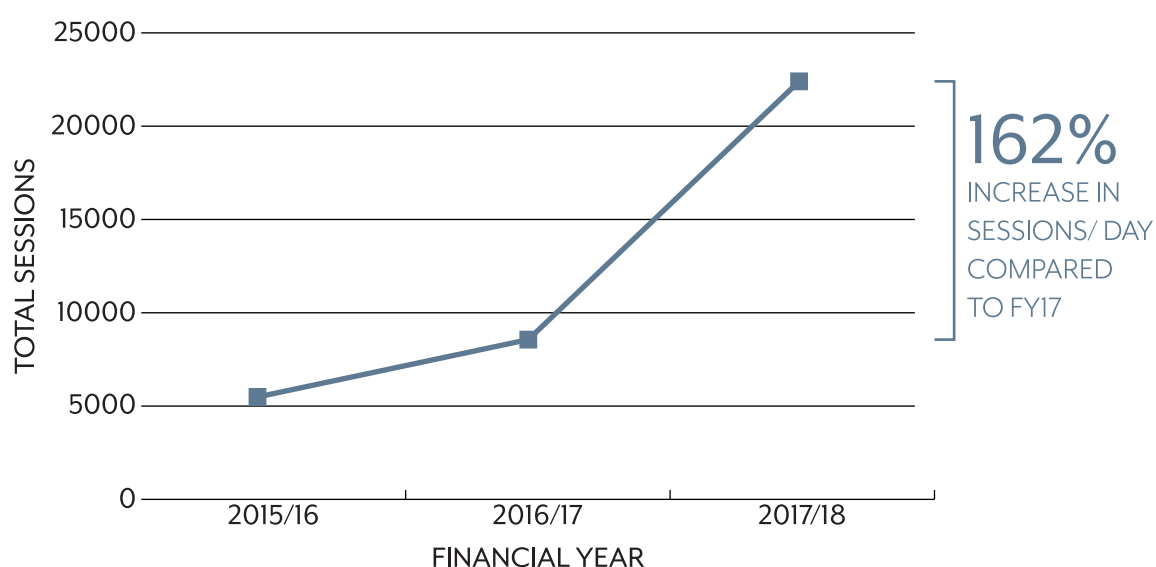
WEBSITE ENGAGEMENT

22,401
WEBSITE SESSIONS

An average of 8 page views per session



- SPECIES PAGES (61%)
- RLS BLOG (14%)
- HOMEPAGE (11%)
- OTHER PAGES (8%)
- OUTPUTS (2%)
- ABOUT RLS (2%)
- FREQUENCY EXPLORER (2%)

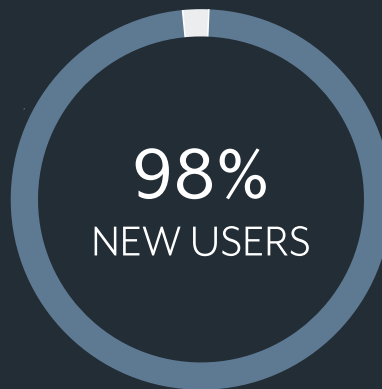


RLS WEBSITE GROWTH

AUDIENCE

12,483
SITE USERS

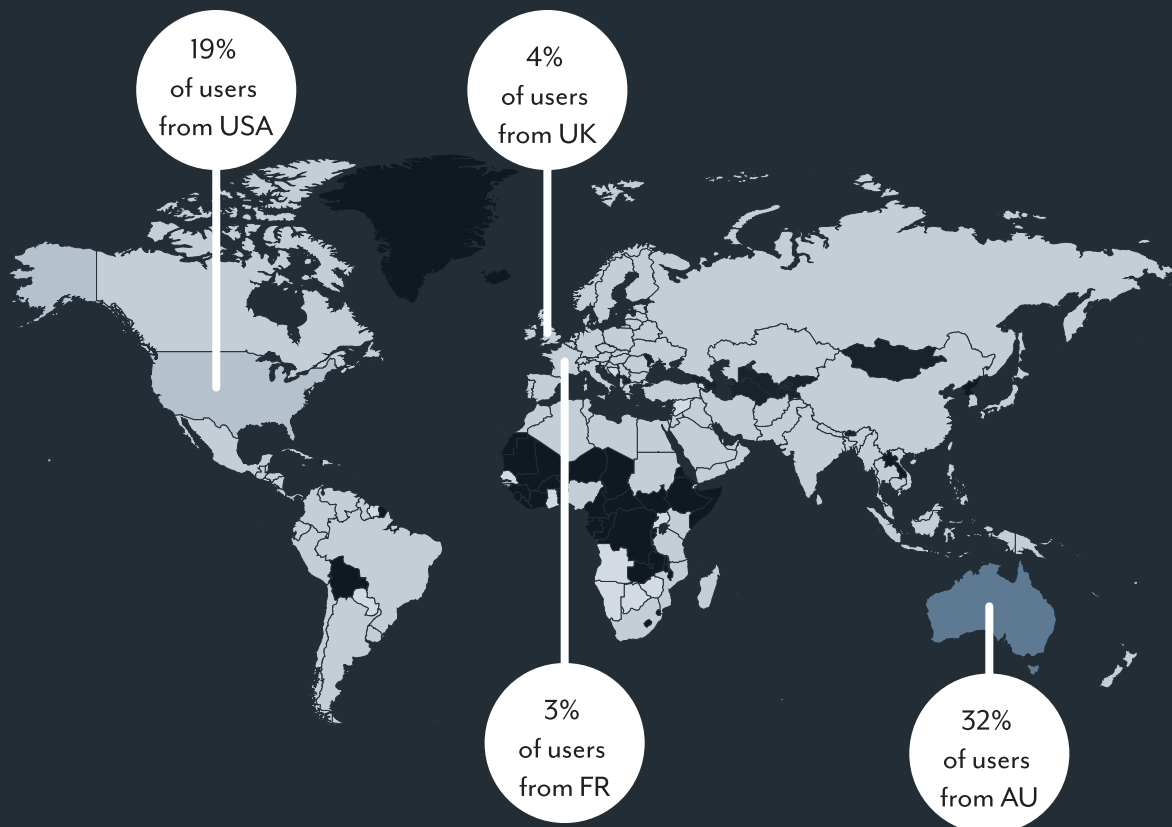
Approximately 5,433
more website users
than FY17



USERS FROM

154

COUNTRIES &
TERRITORIES



RLS ON SOCIAL MEDIA

REACH

The number of people who saw RLS content on social media

109,747

TOTAL REACH

↑ +36%
compared to FY17



f Facebook (96%)
i Instagram (4%)

IMPRESSIONS

The number of times RLS content was displayed on social media

352,767

TOTAL IMPRESSIONS

↑ +104%
compared to FY17



f Facebook (52%)
t Twitter (46%)
i Instagram (2%)

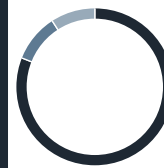
ENGAGEMENT

The number of interactions users had with RLS social media content

20,116

TOTAL ENGAGEMENT

↑ +218%
compared to FY17



f Facebook (81%)
t Twitter (10%)
i Instagram (9%)

TOP SOCIAL MEDIA POST



"We've discovered a new population of one of the world's rarest fishes! Red handfish (*Thymichthys politus*) are only found around SE Tasmania, & were thought to have a single population of 20-40 individuals... until now!"

33,309

REACH

175,548

IMPRESSIONS

4,350

ENGAGEMENTS

2017/18 FIELD ACTIVITIES

SUMMARY OF ACTIVITIES

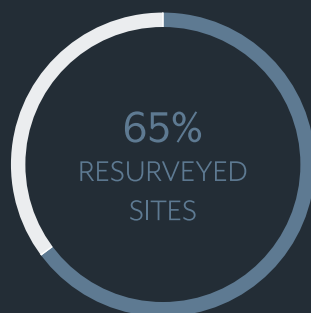
- AUSTRALIA (92%)
- INDONESIA (7%)
- CANADA (1%)
- COOK ISLANDS (<1%)
- QATAR (<1%)



REPRESENTING
APPROXIMATELY
4,705
HOURS OF
VOLUNTEERED TIME



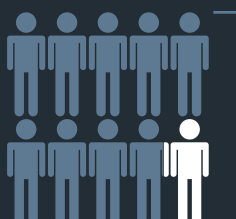
355
SITES
SURVEYED



51%
of sites surveyed have
5+ years of RLS survey data



64
ACTIVE
DIVERS

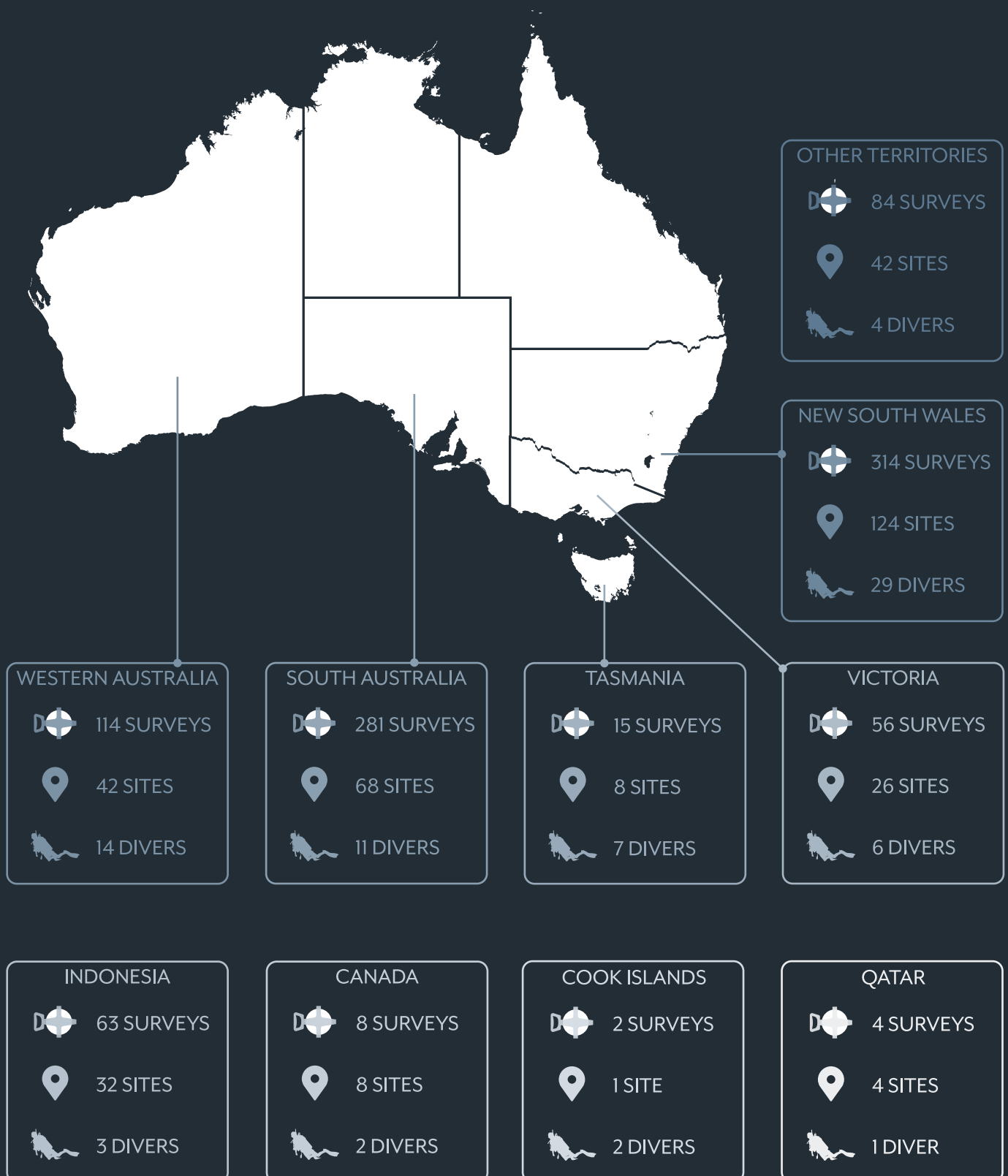


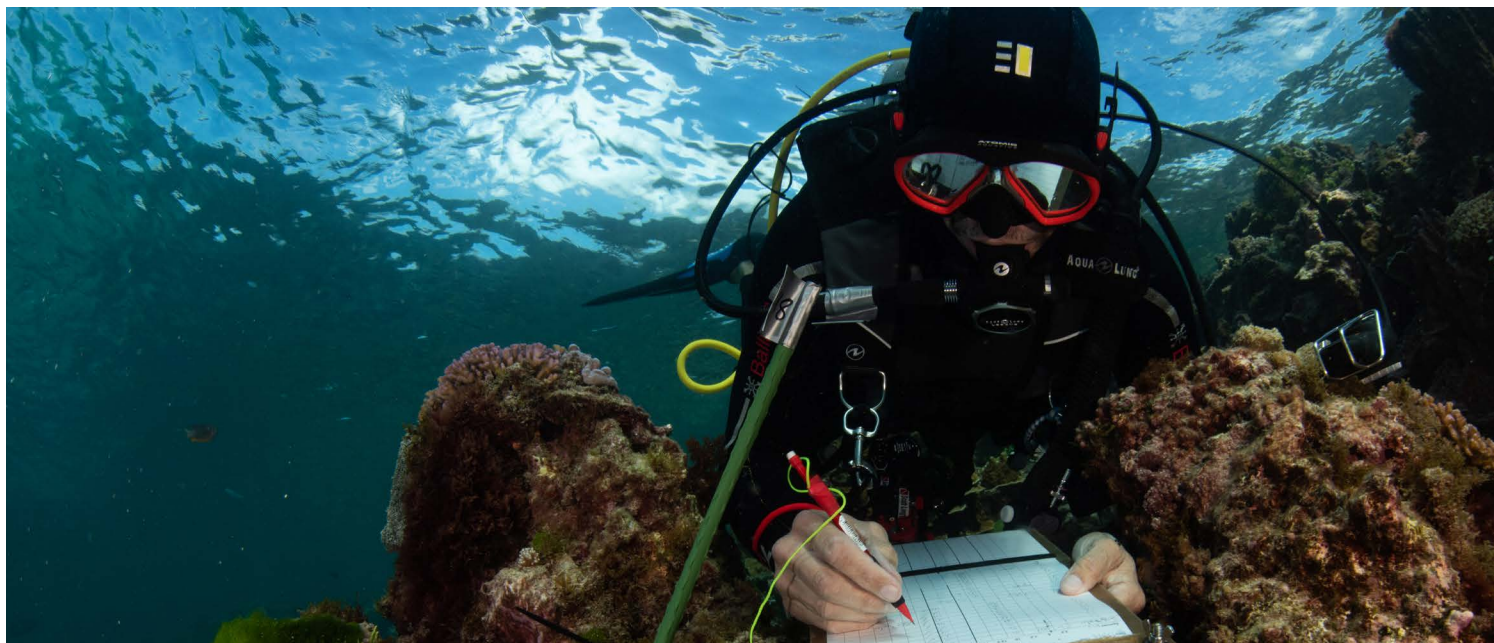
88%
Trained in a
previous FY

52%
of these divers were
active over 5+ years

2017/18 FIELD ACTIVITIES

BREAKDOWN OF ACTIVITIES





THE SCORESBY SHEPHERD AWARDS

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.

JOHN TURNBULL



Over the 2017/18 financial year, John contributed to 99 surveys for the RLS database from sites across NSW, TAS & WA.

Andrew Green, Tom Davis & Paul Day also deserve

honourable mentions for contributing to 59, 44 & 38 surveys, respectively.

THE DISTINGUISHED CONTRIBUTION AWARD

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

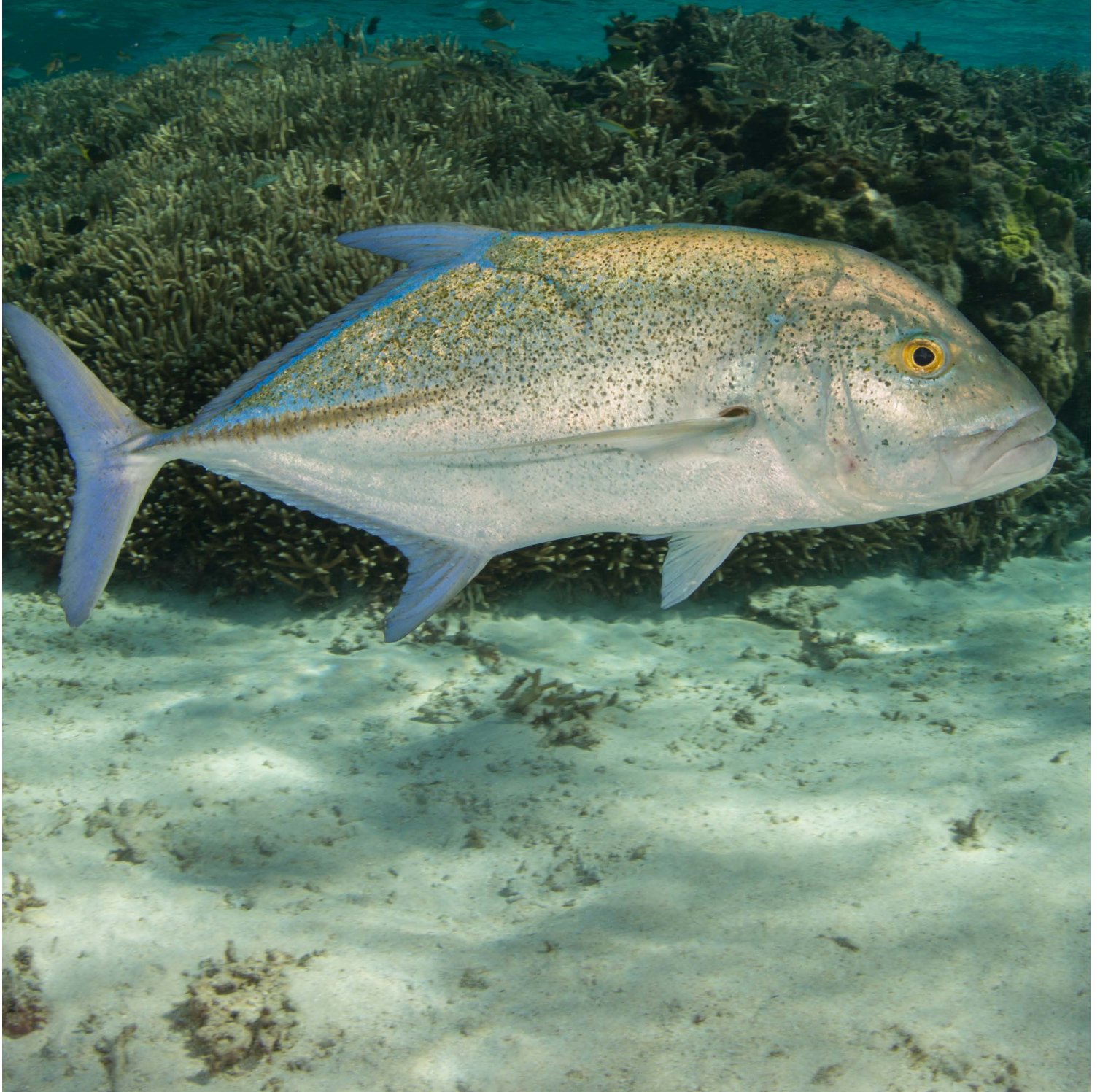
WENDY HUTCHISON & CHRIS CUNNOLD



Wendy & Chris' support before, during & after RLS' survey trips at Rottnest Island every year is invaluable & has allowed RLS to achieve 11 consecutive years of monitoring at Rottnest Island.

Yanir Seroussi also deserves an honourable mention for his work on the RLS flashcards & other online resources.

OUTCOMES





RED HANDFISH MONITORING

RLS provides unique opportunities to assess which reef species show declining populations, including many small fishes and invertebrates found on reefs that are not covered by any other monitoring programs or fisheries.

One of the most threatened of these species is the red handfish, *Thymichthys politus*, which was only known from one remaining 50m long patch of reef in south-east Tasmania. The estimate for this remaining global population, based on monitoring by RLS divers since 2010, was between 20-40 individuals.

RLS divers discovered a second population of red handfish of similar size in January this year – effectively doubling the estimated number of handfish remaining. The discovery generated excitement and news worldwide – the show of public interest in this charismatic small fish, which only measures 7 – 9 cm, was clear, with red handfish tweets reaching >51 million people.

Unfortunately, one of these populations is now under serious threat from habitat degradation and may disappear within the coming months.

A new research and conservation project is currently being established, with hopes to not only halt the habitat degradation, but also employ new techniques to find other populations, which we hope are still out there.

RLS has played a critical role in monitoring this species and searching for new populations, and has been the sole evidence base for acquiring the necessary support to implement a full research and recovery project.

This is just one species - arguably one of the most endangered fishes in the world – but there are no doubt others that are at serious risk, for which RLS may represent the only way to feasibly determine their status, population locations and trends.



MANAGEMENT OUTCOMES

Reef Life Survey Monitoring of Shallow Reef Habitats in Australian Marine Parks.

Report for Parks Australia, Department of the Environment (2017).
Stuart-Smith, R.D. & Edgar, G.J.

Reef Life Survey Assessment of Rocky Reef Biodiversity in the South-West Marine Region (Geographe CMR).

Report to Parks Australia, Department of the Environment (2017).
Stuart-Smith, R.D., Ceccarelli, D., Edgar, G.J. & Cooper, A.T.

2016 Biodiversity Surveys of the Cod Grounds and Pimpernel Rocks Commonwealth Marine Reserves.

Report to Parks Australia, Department of the Environment (2017).
Stuart-Smith, R.D., Ceccarelli, D., Edgar, G.J. & Cooper, A.T.

Biodiversity Survey of Ashmore Reef (Coral Sea) and Comparison with Surrounding Reefs.

Report to Parks Australia, Department of the Environment (2017).
Edgar, G.J., Ceccarelli, D., Stuart-Smith, R.D. & Cooper, A.T.

Biodiversity Survey of the Temperate East Coast Commonwealth Marine Reserve Network: Elizabeth and Middleton Reefs, Lord Howe Island and Norfolk Island.

Report to Parks Australia, Department of the Environment (2017).
Edgar, G.J., Ceccarelli, D., Stuart-Smith, R.D. & Cooper, A.T.

Reef Biodiversity Surveys of Australia's Commonwealth Marine Reserve Network: An Overview.

Report to Parks Australia, Department of the Environment (2017).
Edgar, G.J., Ceccarelli, D., Stuart-Smith, R.D. & Cooper, A.T.

Reef Life Survey Assessment of Coral Reef Biodiversity in the North-West Commonwealth Marine Reserves Network.

Report to Parks Australia, Department of the Environment (2017).
Edgar, G.J., Ceccarelli, D., Stuart-Smith, R.D. & Cooper, A.T.



SCIENTIFIC OUTPUTS

Gravity of human impacts mediates coral reef conservation gains.

PNAS (2018)

Cinner, J.A., Maire, E., Huchery, C., MacNeil, M.A., Graham, N.A.J., Mora, C., McClanahan, T.R., Barnes, M.L., Kittinger, J.N., Hicks, C.C., D'Agata, S., Hoey, A.S., Gurney, G.G., Feary, D.A., Williams, I.D., Kulbicki, M., Vigliola, L., Wantiez, L., Edgar, G.J., Stuart-Smith, R.D., Sandin, S.A., Green, A., Hardt, M.J., Beger, M., Friedlander, A.M., 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., Sumaila, U.R., Pardede, S. & Mouillot, D.

The importance of sponges and mangroves in supporting fish communities on degraded coral reefs in Caribbean Panama.

PeerJ (2018)

Seemann, J., Yingst, A., Stuart-Smith, R.D., Edgar, J.G. & Altieri, A.H.

Species' thermal ranges predict changes in reef fish community structure during 8 years of extreme temperature variation.

Diversity & Distributions (2018)

Day, P.B., Stuart-Smith, R.D., Edgar, G.J. & Bates, A.E.

Pollution signature for temperate reef biodiversity is short and simple.

Marine Pollution Bulletin (2018)

Ling, S.D., Davey, A., Reeves, S.E., Gaylard, S., Davies, P.L., Stuart-Smith, R.D. & Edgar, G.J.

Moving beyond trophic groups: evaluating fishing-induced changes to temperate reef food webs.

Marine Ecology Progress Series (2018)

Soler, G.A., Edgar, G.J., Stuart-Smith, R.D., Smith, A.D.M. & Thomson, R.J.

Key drivers of effectiveness in small marine protected areas.

Biodiversity and Conservation (2018)

Turnbull, J.W., Esmaili, Y. S., Clark, G.F., Figueira, W.F., Johnston, E. L. & Ferrari, R.

Thermal limits to the geographic distributions of shallow-water marine species.

Nature Ecology & Evolution (2017)

Stuart-Smith, R.D., Edgar, G.J. & Bates, A.E.

Abundance and local-scale processes contribute to multi-phyla gradients in global marine diversity.

Science Advances (2017)

Edgar, G.J., Alexander, T.J., Lefcheck, J.S., Bates, A.E., Kininmonth, S.J., Thomson, R.J., Duffy, E., Costello, M.J. & Stuart-Smith, R.D.

Fishing-gear restrictions and biomass gains for coral reef fishes in marine protected areas.

Conservation Biology (2017)

Campbell, S.J., Edgar, G.J., Stuart-Smith, R.D., Soler, G. & Bates, A.E.

10 YEARS OF REEF LIFE SURVEY



10 YEARS OF SURVEYS

 11,941

Total number of surveys conducted
by RLS divers

3.3K

Number of sites surveyed by RLS
over the past decade.

54 Countries
surveyed
by RLS

100%



Percentage of the world's continents surveyed by
RLS (including Antarctica).



NORTHERNMOST SITE
Gåsodden, Norway

78.4°N



SOUTHERNMOST SITE
Anchorage Wall, Antarctica

146°

Degrees of latitude spanned
by RLS surveys

67.6°S

10 YEARS OF VOLUNTEERS

269



Total number
of volunteer divers
involved in RLS

60K HOURS

of volunteered time (that's almost 7 YEARS)

\$1.8 MILLION

of in-kind contributions from RLS divers



Divers from

9

countries

52

divers trained
in 2008

ELEVEN



RLS trainers

40%

of divers still involved with
RLS 10 years later

10 YEARS OF DATA

670K 

Number of records
in the RLS database

230,400



Total number of
Photo Quadrats
taken by RLS divers

17.7 MILLION



Number of individual reef-dwelling animals
observed, sized & recorded on RLS transects

8,962 

Download events from
Global Biodiversity information Facility
& Atlas of Living Australia



Scientific papers &
management reports
published
that use RLS data

SIX

scientific papers published in the
prestigious science journal

nature

TWELVE     

Locations monitored annually or
biennially since 2008



ROTTNEST ISLAND,
WESTERN AUSTRALIA

First location with 10 consecutive years
of RLS data



FINANCIAL REPORT





FINANCIAL SUPPORT

Reef Life Survey would like to thank the following people for their financial support over the 2017/18 financial year.

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

MICHAEL MULLER 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

Graham Edgar

Byron Bishop

RLSF FINANCIAL OVERVIEW

REEF LIFE SURVEY INCORPORATED

RLSF Inc. account spends & receives grant funding & other income



- TRAVEL (42%)
- FIELD EXPENSES (27%)
- COMMS & PROMOTIONS (6%)
- YACHT RUNNING EXPENSES (6%)
- PROFESSIONAL SERVICES (6%)
- MATERIALS & SUPPLIES (4%)
- INSURANCE (3%)
- WEB DESIGN (2%)
- FINANCIAL AUDIT (2%)
- MEMBERSHIP FEES (1%)

MARINE PUBLIC FUND

Account through which donations are spent & received.



- COMMUNICATIONS (47%)
- WEB DEVELOPMENT (37%)
- GRANT OFFICER (10%)
- FIELD EXPENSES (7%)

RLSF INCORPORATED FINANCES

BUDGET CATEGORY	SUBCATEGORY	AMOUNT
INCOME	Grants & Consultancy	\$140,358.6
	Merchandise	\$255
	Membership	\$10
TOTAL INCOME		\$140,623.6
EXPENSES	Professional Services	\$4,464.9
	Travel	\$33,231.8
	Field Expenses	\$21,809.3
	Yacht Running Costs	\$4,528.2
	Materials & Supplies	\$3,050.9
	Communications & Promotional	\$5,134.52
	Financial Audit	\$1,650
	Postage	\$85.2
	Web Design	\$1,918.58
	Insurance	\$2,260
	Membership Fees	\$1,125
	The Scoresby Shepherd Award	\$250
	Sundry	-\$161.1
TOTAL EXPENSES		\$79,347.3
OPERATING PROFIT		\$61,276.3
BUDGET CATEGORY	SUBCATEGORY	AMOUNT
EQUITY	Retained Earnings	\$61,894.7
	Current Earnings	\$72,076.3
TOTAL EQUITY		\$133,971.0

MARINE PUBLIC FUND FINANCES

BUDGET CATEGORY	SUBCATEGORY	AMOUNT
INCOME	Donations	\$13,580
	Merchandise	\$1,200
	Membership	\$1,570
TOTAL INCOME		\$16,350
EXPENSES	Field Expenses	\$6,719.9
	Communications	\$47,155.2
	Bank Fees	\$108.0
	Grant Officer	\$10,000
	Meeting Costs	\$24.2
	Web Development	\$37,048.9
	Postage	\$58.7
TOTAL EXPENSES		\$101,114.7
OPERATING PROFIT		-\$84,764.7*

BUDGET CATEGORY	SUBCATEGORY	AMOUNT
EQUITY	Retained Earnings	\$136,679.4
	Current Earnings	-\$95,564.7
TOTAL EQUITY		\$41,114.7

* The profit loss represented here is the result of the expending of funds recieved from The Ian Potter Foundation in 2016/17 financial year.

An underwater photograph of a coral reef. In the foreground, there is a large, branching, light-colored coral structure. Several fish, including a prominent yellow tang with a black spot on its side, are swimming around the coral. The background is a deep blue-green color, suggesting a deep underwater environment. The text "PARTNERS & SUPPORTERS" is overlaid in a white box in the upper center of the image.

PARTNERS & SUPPORTERS



PARTNERS & SUPPORTERS

A large number of supporting individuals, organisations and community groups contributed to the success of the Reef Life Survey program throughout 2017/18.

MAJOR PARTNERS

Aquenal Pty. Ltd.

Cradle Coast NRM

Department of Biodiversity, Conservation & Attractions, WA

Department of Environment, Water & Natural Resources, SA

Institute for Marine & Antarctic Studies,
University of Tasmania

NSW Department of Primary Industries

NRM South

Parks Australia

Parks Victoria

The Ian Potter Foundation

Rottnest Island Authority

WA State NRM

KEY SUPPORTERS

Antonia Cooper, RLS/IMAS

Combined Hunter Underwater Group

Colleen Morris

Dr Emmett Duffy, MarineGEO,
Smithsonian Institute, USA

Dr Mikel Becerro, PNA-CSIC, Spain

Ella Clausius

Environment Protection Authority, SA

Friends of Beware Reef

Jemina Stuart-Smith, IMAS

John Anderson, Forte Web Design

Just Berkhout, IMAS

Justin Hulls, IMAS

Michael Muller

Nature Coast Marine Group

PBD Consulting Ptd. Ltd.

Pieter van der Woude

Solitary Islands Underwater Research Group

Southern Tasmanian Divers

Sumit Gupta, True Arrow Software

Underwater Explorers Club of Western Australia

Underwater Research Group of NSW

Western Australian Divers for Diversity Inc.

Whitsunday Escapes



THANK YOU

The Reef Life Survey Foundation acknowledges the invaluable support from the 64 divers (Australian and International) who contributed their skills & expertise to the RLS program over the 2017/18 financial year.

AARON GALLOWAY

ALAN WILKINS

ALICIA MCARDLE

ALICIA SUTTON

ANDREW GREEN

ANTONIA COOPER

ASHLEY SMITH

BEN JONES

BILL BARKER

BOB EDGAR

CAITLIN WOODS

CAROLINA GARCÍA

CHERYL PETTY

CHRIS WESTLEY

CLAIRE BUTLER

DANIEL BROCK

DAVID MILLER

DON LOVE

EMMA HENRY

FRED RUEFF

GERMÁN SOLER

GRAHAM EDGAR

GRANT PEARCE

IAN SHAW

JAMES BROOK

JANET ABBOTT

JASON HOARE

JENNIFER HOSKIN

JEREMY WARD

JOHN TURNBULL

JORDAN LOGAN

JOSH MALONEY

KATE FRASER

KATE TINSON

KEVIN SMITH

KRIS O'KEEFE

LOUISE DE BEUZEVILLE

MARGO SMITH

MARIANNE PURTON

MARTIN PUCHERT

MATT NELSON

MERYL LARKIN

MICHAEL ABBOTT

MICHAEL BROOKER

NEIL VAUGHAN

NICOLA DAVIS

PAUL DAY

PAUL TINKLER

PETER PFENNIG

REBECCA WATSON

RICK STUART-SMITH

RODRIGO RIERA

ROSS WHIPPO

SALLYANN GUDGE

SAM GAYLARD

SAM OWEN

SARAH PAYNE

SCOTT LING

SIMON BRYERS

SOPHIE EDGAR

SUE NEWSON

TOM DAVIS

WENDY HUTCHISON

YANIR SEROUSSI

