Department of Conservation
Te Papa Atawhai

Meeting:	Conservation Services Programme Technical Working Group
Date:	26 August 2014
Time:	12:30 pm – 4:30 pm
Place:	Level 4 Conference Room, Conservation House, 18-32 Manners St, Wellington.
Chair:	Ian Angus (ph: 04-471-3081; email: iangus@doc.govt.nz)

Attendance: Richard Wells (DWG/FINZ), David Middleton (SNZ), Rob Mattlin (MWR), Jim Roberts, Ian Doonan, Rosie Hurst (NIWA), Bruce Robertson (Otago Uni, via Skype), Michelle Beritzhoff-Law, Vicky Reeve, Nathan Walker, Rohan Currey (MPI), Milena Palka (WWF), Ed Abraham, Phillip Neubauer (Dragonfly), Biz Bell (WMIL), Paul Crozier, Igor Debski, Laura Boren, Kris Ramm, Brent Bevan, Graeme Taylor (DOC)

Apologies:

CSP presentation:

1	POP2012-02 New Zealand sea lions – demographic assessment of the cause of decline at the Auckland Islands	Jim Roberts (NIWA)

Part 1 Demographic modelling
DM – no MCMC diagnostics in report to show good convergence of model
JR – can produce traces in final report
DM – why do posterior distribution plots only go to 2008
JR – should go to 2010, will correct
DM – would also be good to see MPD
JR – can do
RC – could drift be due to relatively short chain lengths? Diagnostics would be useful to see
DM – general lack of plots of fit of model to data, the report does provide these for age distribution but not much else
JR – have fits to tagging, will produce in final report
DM - translating demographic rates to cohort numbers is a useful output, not included in this report?
JR – out of time. If time allows, these will be developed and included
MB - 92 and 93 seem like particularly strong cohorts, similar to findings of Childerhouse
JR –Childerhouse study on lactating females didn't identify colony of origin of animals, but this study suggests Enderby cohort was strong.
DM – as tag loss is included in estimates, any inter-annual variation in tag loss would come through in survival estimates
JR – yes, covered in discussion, will also include in abstract
DM – you didn't provide evidence to support age classes used for tag loss, further consideration in early stages of project would have been useful
JR - used classes based on those developed by other researchers

DM - breakpoint methodology not very well described

JR – will describe in more detail in final report

DM – did you investigate merging rather than splitting for identifying breakpoints

JR – no

RC – need to consider random effects as well as breakpoint change

JR – won't be able to investigate further in the project, but will acknowledge

EA – if estimated in the Baysian model this may have allowed investigation of year to year variation

DM - retrospective analysis just in MPD

JR – MPD used to save time when just looking for insights

DM - have you assessed MCMC in relation to effort spent resighting?

JR – could do, to build on assessment conducted to inform method development

DM- rational for decision to estimate survival in particular age groups isn't obvious in the report

DM - the choice of optimal model (8) isn't adequately argued in the report, e.g. why is model 11 not a better model?

JR - when fitting to pup census (model 11) it has some unusual results

ID – ensure this is documented somewhere so that the decision making process can be understood.

DM - need to document migration of animals between colonies, as will influence mortality estimates

JR – a plot of Dundas marked animals at Enderby is provided in the report

DM – should clarify number of observations excluded due to movement

DM – in relation to causes of decline, the correlative analysis doesn't prove very informative as other factors have not been included in the modelling

DM – have detailed annotations on report, will provide

Part 2 Correlative analysis

DM – could use MCMC samples to look at uncertainty

DM – for BCI estimates will you look further at whether animals were randomly selected etc?

JR – no, out of time, agree would be useful to do

ID – some animals were captured in different years so should be considered in further analyses

There was discussion that 1998 was a poor year for numerous pinniped species in the Pacific, was an extreme El Nino year, as well as having poor tags applied

MB – could relatively high BCI in 99 reflect recovery following bad year in 98 when many pups died?

JR/RW – reasonable hypothesis

MP – how quickly does body condition change?

JR – data shows rapid changes, within season as well as between years

BR – will this be expertly reviewed?

JR – the intention is that Mark Hindell and Andrew Trites review the report

ID clarified that Darryl MacKenzie had reviewed the earlier findings presented on 20 May 2014 (the review is appended to the minutes of that meeting)

MP – WWF may be able to support independent review

2   **POP2014-02 Black petrel population project**   Kris Ramm (DOC)
         methodology discussion.

Acoustic monitoring:
- Acoustic good for identifying presence at low density
- How far away can calls be picked up? – recorders in valley unlikely to pick up calls from summit areas
- Can test recorders by moving them away from known areas
- One recorder may cover 10-20 hectares, can move every few days or a week in December
- Acoustic will need ground truthing, use only in marginal habitat.
- Could use a placement design of multiple recorders to assess volume levels in order to better pinpoint where birds are calling

Use of dog-aided searching:
- Can cover much larger areas more quickly
- Best if no other seabird species are present
- GPS them to record search effort, use in higher likelihood areas on GBI.

At-sea mark/recapture:
- Requires a major assumption that birds will mix fully at-sea – this is unlikely tracking studies of other species have shown colony specific foraging patterns
- If birds were captured at-sea you could collect interesting banding data. Probably better option than temporary marking at colony
- Trialled paint marking in 2001 – paint lasted 7-10 days, green and pink were best colours
- Method works well with Hutton's shearwater, as radio tracking showed good mixing, and birds raft up in small area. Had hundreds of counts. This behaviour is quite different from black petrels though.
- Getting enough dedicated searching at-sea will be the issue – would require charter surveys. Could combine with observation for banded birds. Getting independent samples likely be an issue as birds follow vessels.

At-sea tracking:
- Sky ranger using aerial detection has been very useful for taiko in the Chathams – this method could be used across GBI efficiently, but less effective to identify any other potential breeding areas.
- Birds could be captured at-sea with a scoop net if attracted to vessels.
- Could trial the capture technique to assess feasibility.
- Should do at incubation so that they will be present at the colony by day.
- If you satellite transmitting tags getting a fix at the colony is unlikely.

Other methods:
- Further work in eastern Pacific would be interesting, at-sea observations would avoid mixing issues in New Zealand waters.

Great Barrier Island:
- A number of breeding sites on GBI already known, can conduct searches, would be enhanced by use of dogs. Sites on isolated hills etc which would require a lot of walking between sites.
- For purpose of population estimate it is more important to focus on surveying other areas rather than more effort at the main study colony.
- Due to size of island, low density areas must be considered as these can add up quite quickly.
- Search key areas, and use recorders in other areas to test assumption those areas are empty.
- Stratify island – ground searches in high likelihood areas, acoustic monitoring in possible areas.
- Areas adjacent to 35ha study site would be included in stratified GBI survey work.
- First priority though should be to check areas already suspected to have breeding birds.
- Acoustic probably better to assess low density sites.

Little Barrier Island:
- Acoustic recorders on LBI were picking up black petrels in low areas rather than just upper island where Imber's study site is. Acoustic good to record presence and refine search areas, but potentially a lot of the island could provide habitat
- The survey technique for Cook's petrel could be used, but black petrel will occur at lower density, so will need larger plots, need to balance size and number of plots.
- Checking known burrows to look at occupancy would be useful, will test Imber's estimate of 100 – best done in January
- Priority in the first year should be survey known burrows and do some sample plots/transects. Dogs be used late in season after Cook's breeding season

CSP Reports tabled

IA – the report "POP2013-06 Oceanic whitetip shark review" by Malcolm Francis (NIWA) is tabled for review.

Close of meeting

IA – further written feedback on the items discussed or tabled today is welcomed by 9 September 2014.