EVOS data project - Plots

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Contents

Background

We are writing up a publication to report results of a two year data archiving effort by a small group of researchers and students at the National Center for Ecological Analysis and Synthesis at UC Santa Barbara. The Exxon Valdez Oil Spill Trustee Council (EVOSTC) was formed following the Exon Valdez oil spill in Alaska in 1989. Since then, the EVOSTC has funded hundreds of projects and in 2012 we began a project to recover and archive the data collected in these EVOSTC funded projects.

For this paper we ask 5 main questions about the data collected from the Exxon Valdez Oil Spill Trustee Council funded projects:

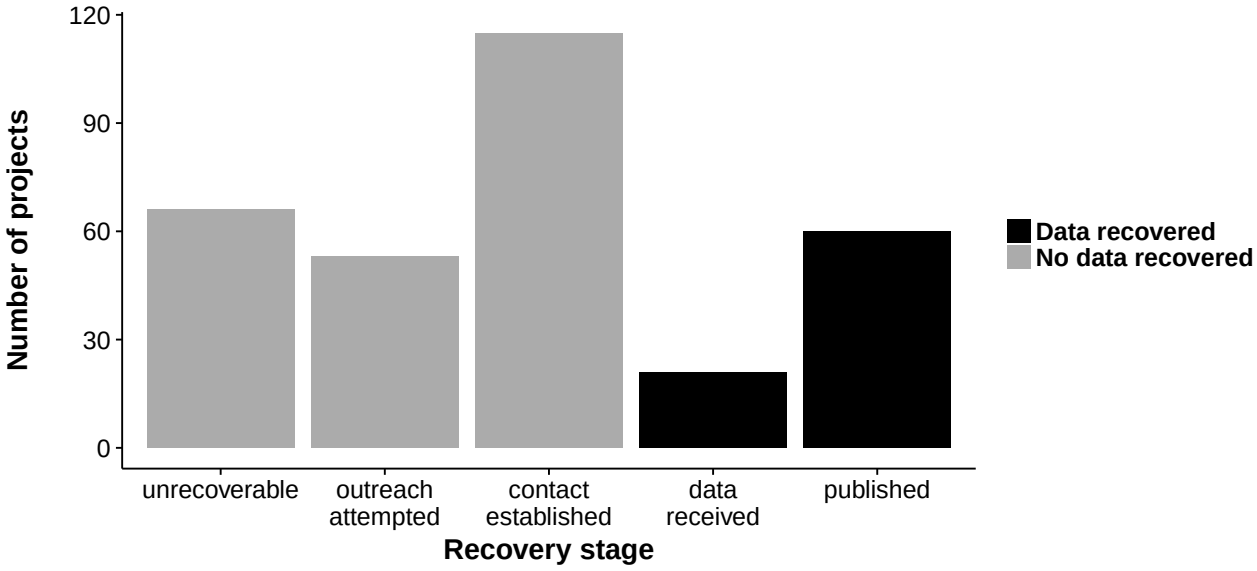
1. Twenty-five years after the EVOS, for how many projects funded by EVOSTC can we collect data?
2. Are there certain **research fields** that are more likely to make data available than others?
3. Are there certain **sectors** that are more likely to make data available than others?
4. Is the availability of data correlated to how old the data are? (temporal relationships?) 5.Why did people refuse to share their data?

MS Plots:

1. Project Status Reporting

> Twenty-five years after the EVOS, for how many projects funded by EVOSTC can we collect data?

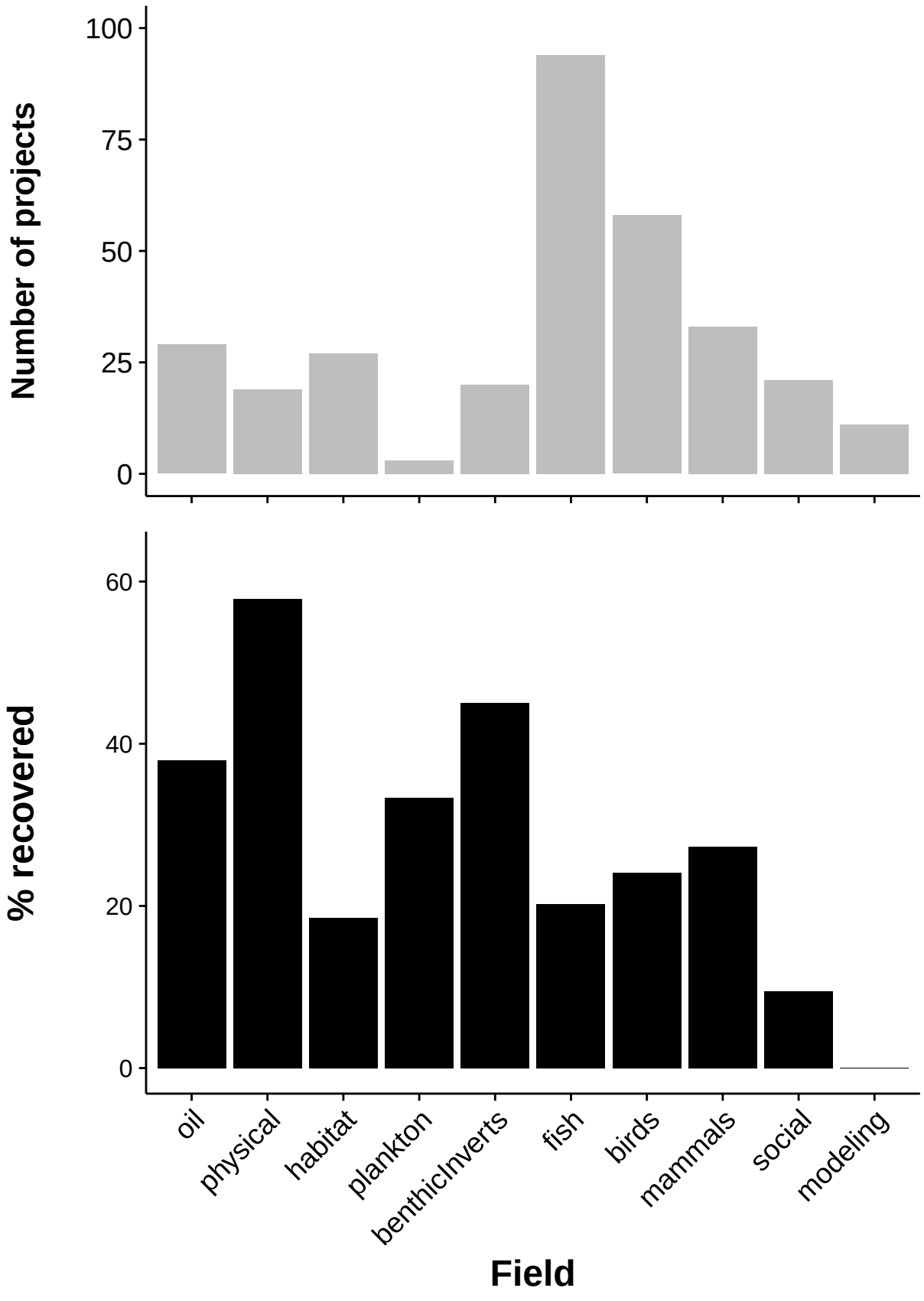
Figure 1: : Final status of all projects from which data were requested. Black bars are projects for which data were successfully acquired, grey bars represent projects for which no data were acquired.



2. Research field

Are there certain **research fields** that are more likely to make data available than others?

Figure 2: Percent success of data recovery, with projects grouped by research field. The top plot is total number of projects funded for each field, the bottom plot shows the percent success for the given field.


Number of projects
100
75
50
25
0
% recovered
60
40
20
0
oil
physical
habitat
plankton
benthicInverts
fish
birds
mammals
social
modeling
Field

3. Classification tree

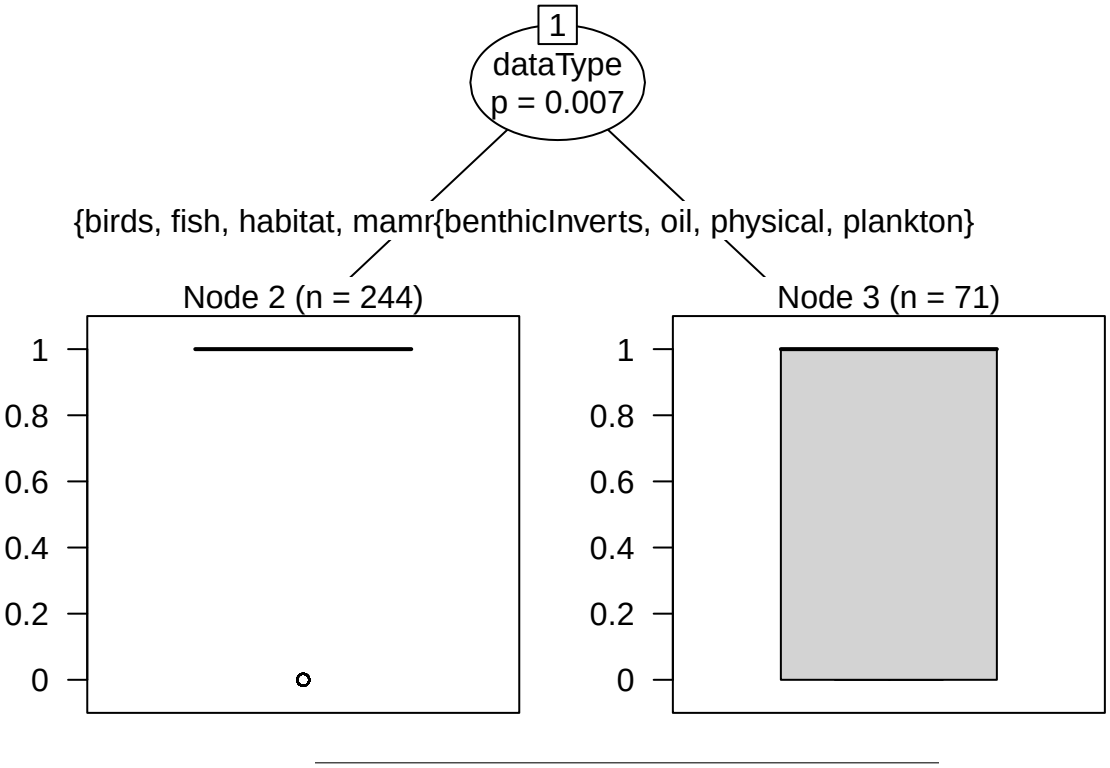
How do the important characteristics influence the output (success)?

Figure 3: Classification tree of which data variables and characterizations predicting successful and non-successful data recovery. Data field was the only variable that could be used to predict data availability.

NOTES: This will be redrawn in another program

```
rslt2$dataType<-factor(rslt2$dataType)
partreeBio<-ctree(succ~agSubGrp+end+dataType,data=rslt2)

plot(partreeBio)
```



4. Reasons for not sharing

Why don't people share data?

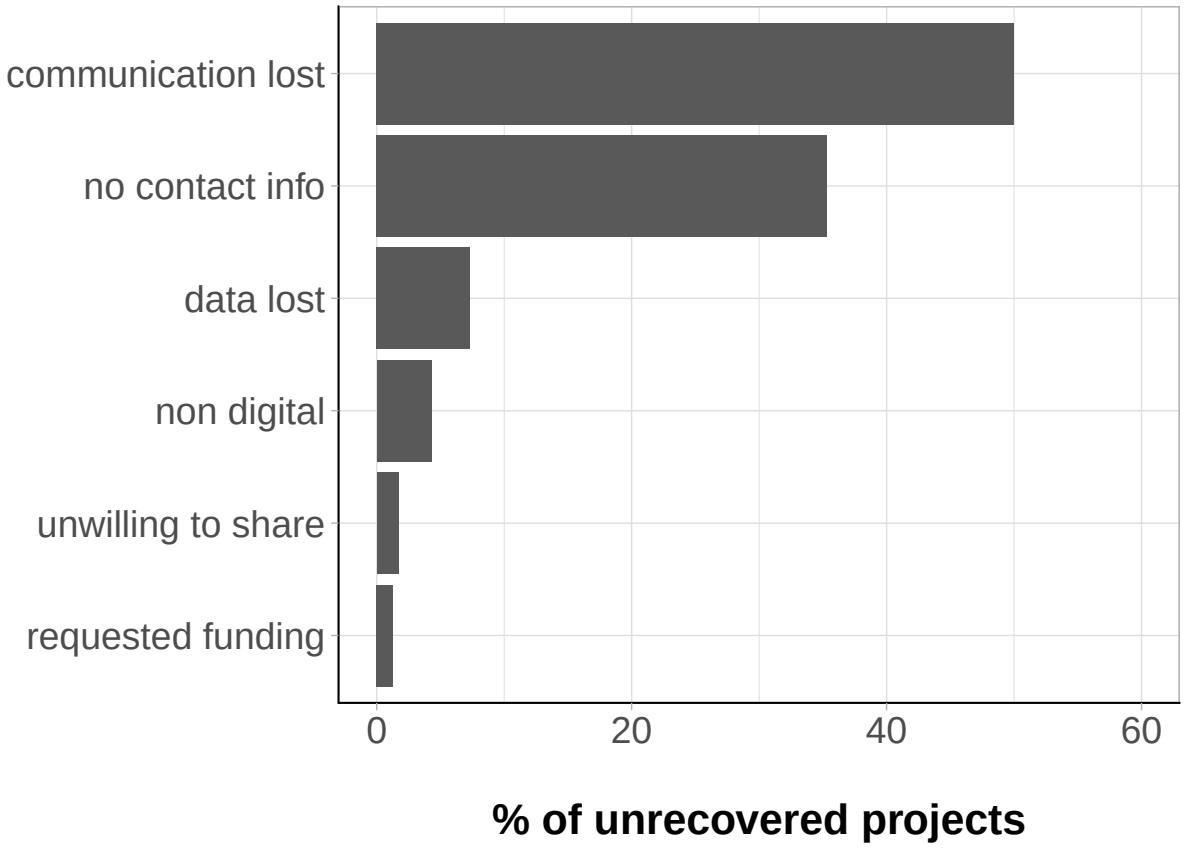
Figure 4: Reasons given for not providing data. Communication loss and lack of contact information were the main reasons data were not obtained.

NOTES:Here we flip the axes to separate this analysis from the others. These data are not a sub-grouping of our results like the others, but rather a analysis of only the unrecovered datasets. Also unlike the other data above, we did not run stats here.

Data details: Here I used all of the data that were not collected and sorted them into categories based on the redmine notes we took:

- All datasets labeled "emailed" were grouped with a other datasets that were labeled "unrecoverable" because no contact information could be found.
- All datasets labeled "replied" we put into their own category called "communication lost".

- The “data lost” category includes all datasets in which someone confirmed that the data no longer existed either due to damage, non-persistent formats (not including printed/non-digital), etc.
- The other are self-explanatory, but represent confirmed responses as to one of these reasons.
- I tried to separate out the datasets that were not recovered but “should be on the CD” to sort these into their own category, but we acked sufficient notes to confidently add this grouping.



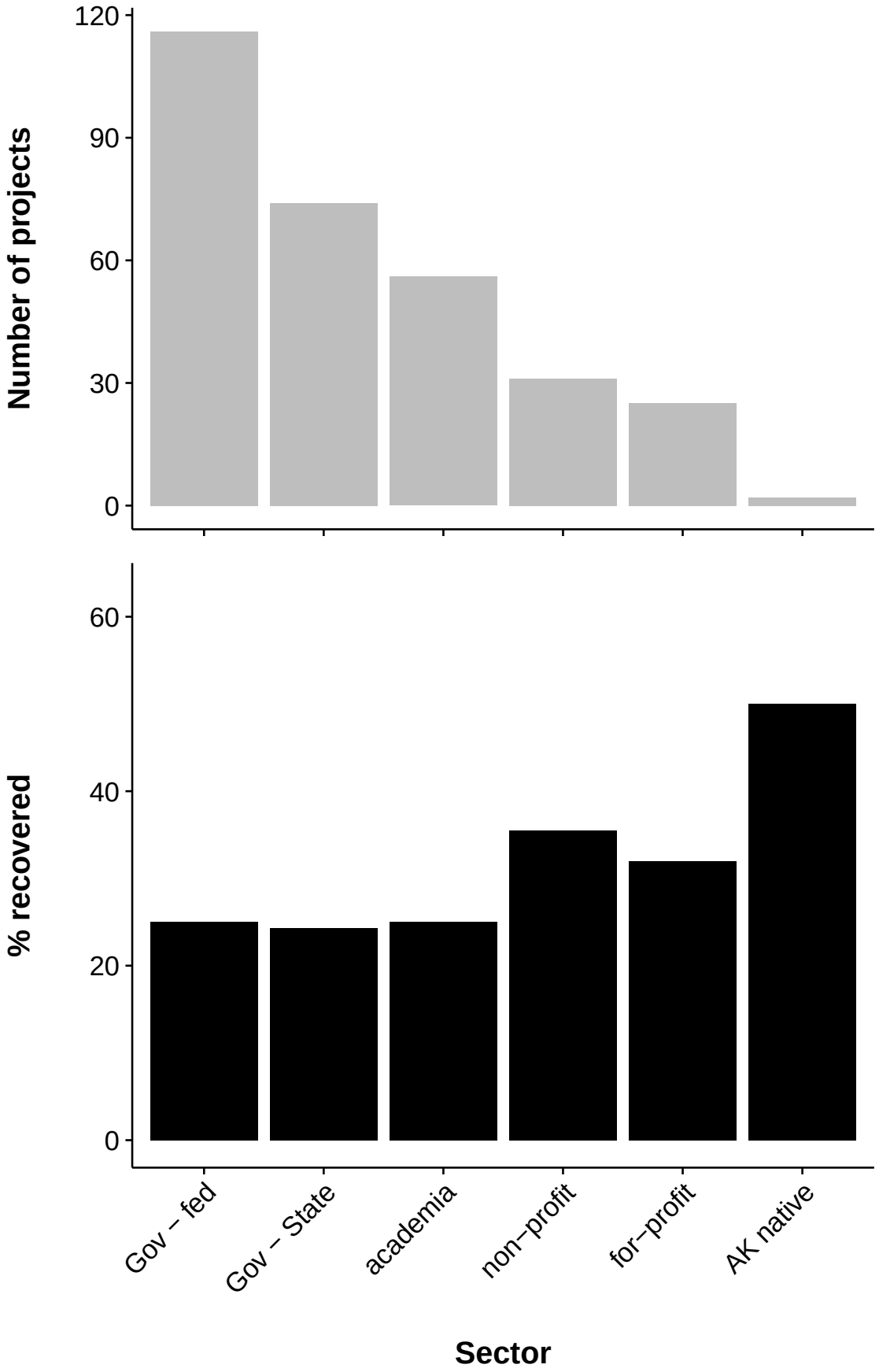
Supplementary figures

S1 Figure. Awardee agency sector

Are there certain **sectors** that are more likely to make data available than others? (based on PI's affiliation)

SuppFigure 1: Percent success of projects by agency sector. The top plot is total number of projects funded for each sector, the bottom plot shows the percent success for the given sector.

NOTES: We stack nProjects/percent graphs to display variation in nProjects between groups as well as variation in relative responses for each group. These data show interesting opposing trends in nProjects and percent recovery


Number of projects
120
90
60
30
0
% recovered
60
40
20
0
Gov – fed
Gov – State
academia
non–profit
for–profit
AK native
Sector

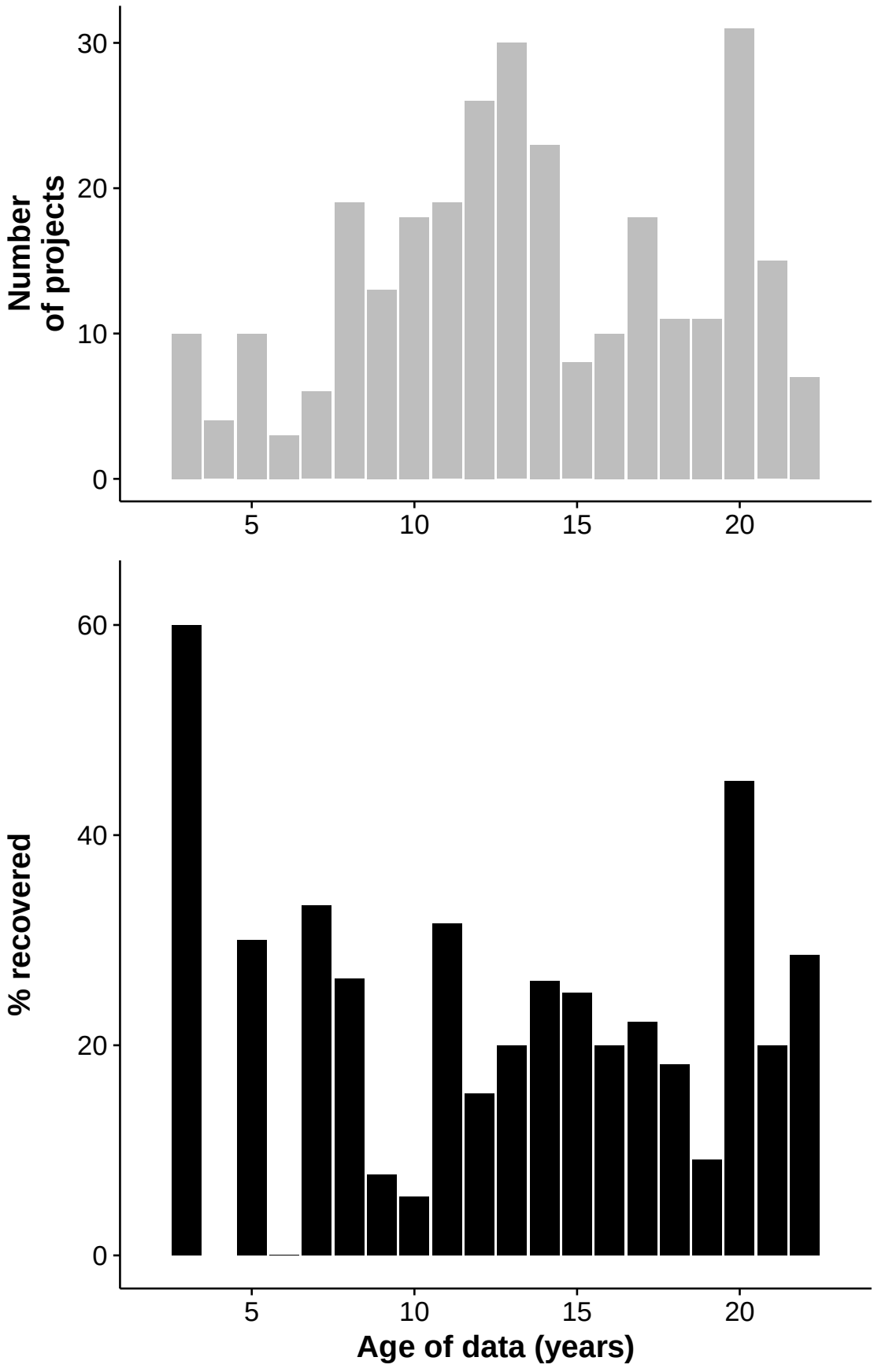
S2 Figure. Temporal trends?

Is the availability of data correlated to how old the data are?

SuppFigure 2: Percent success of projects by age of data. Age is calculated based on number of years between the last year of EVOSTC funding and start of the archiving project (2012). The top plot is total number of projects that ended each year, the bottom plot shows the percent success for the given year.

NOTES: We stack nProjects/percent graphs to display variation in nProjects between groups as well as variation in relative responses for each group.

The x-axis might not be initially intuitive but we are representing years since a project ended in opposite-chronological order to show any effect of increasing age of a dataset. We chose this design to be able to compare to Michener et al. 1997 - fig 1.


Number of projects
30
20
10
0
5
10
15
20
% recovered
60
40
20
0
5
10
15
20
Age of data (years)