Response function summary

```
## Parsed with column specification:
## cols(
##   .default = col_character(),
##   eec = col_double(),
##   dose_response = col_double(),
##   half_life = col_double(),
##   best = col_double()
## )
```

```
## See spec(...) for full column specifications.
```

```
##
##     bottom-up direct larvae  direct snail      top-down
##              6            39            46            53
```

```
##
##     Haematobium         Mansoni           Other Snail predators
##              12              50              29              53
```

Chemical	Bottom Up	Direct Larvae	Direct Snail	Top Down	Total Records
2,4-D	0	0	0	3	3
Ammonium Fertilizer	3	7	3	1	14
Atrazine	3	7	5	1	16
Butachlor	0	2	1	1	4
Butralin	0	2	2	0	4
Carbaryl	0	1	2	5	8
Chlorpyrifos	0	5	3	6	14
Deltamethrin	0	0	1	1	2
Diazinon	0	0	2	0	2
Endosulfan	0	0	2	3	5
Esfenvalerate	0	0	0	2	2
Fenitrothion	0	0	0	2	2
Fluazifop-p-butyl	0	2	1	0	3
Glyphosate	0	5	6	0	11
Lambda-cyhalothrin	0	0	0	3	3
Malathion	0	3	7	3	13
Other Fertilizer	0	0	4	0	4
Paraquat	0	0	1	1	2
Pendimethalin	0	2	2	0	4
Permethrin	0	0	0	2	2
Profenofos	0	2	3	2	7
Terbufos	0	0	0	3	3
Trifluralin	0	0	0	2	2

```
# For chemicals with adequate data, e.g. those that have evidence for approximately all hypthesized pat
RFx_multis <- RFxSum %>% filter(Chemical %in% c("Atrazine", "Butachlor", "Butralin",
                                                "Chlorpyrifos", "Glyphosate", "Malathion", "Profenofos"
                                System != "Other") %>%
```

```
  group_by(Chemical, parameter, System) %>%
  summarise(nfx = n(),
            matches = paste(Study, collapse = " ; "),
            species = paste(Species, collapse = " ; ")) %>% filter(nfx > 1)


RFxSum <- RFxSum %>% full_join(RFx_multis, by = c("Chemical", "parameter", "System"))
```

```
#Get NAWQA data, functions, and response functions summary
load("~/RemaisWork/Schisto/R Codes/ag_schist/Agrochemical_Review/Sims/Data/NAWQA_dat_functions.RData")

nawqa_sum <- t(sapply(chems, get_nawqa_sum))
  colnames(nawqa_sum) <- c("nawqa.50", "nawqa.25", "nawqa.75")

study_sum <- RFxSum %>%
  inner_join(as.data.frame(cbind(Chemical = chems, nawqa_sum)), by = "Chemical") %>%
  group_by(study_long) %>%
  summarise(Chemicals = paste(unique(Chemical), collapse = ","),
            #Chemical_Class = paste(unique(Class), collapse = ","),
            #Peak_EEC = paste(unique(eec), collapse = ","),
            #NAWQA.50 = paste(unique(nawqa.50), collapse = ","),
            #NAWQA.25 = paste(unique(nawqa.25), collapse = ","),
            #NAWQA.75 = paste(unique(nawqa.75), collapse = ","),
            Species = paste(unique(Species), collapse = ","),
            Model_parameter = paste(unique(parameter), collapse = ","))
```

```
## Warning: Column `Chemical` joining character vector and factor, coercing
## into character vector
```

```
RFxSum %>% group_by(Chemical) %>%
  summarise(EEC = mean(eec),
            Source = first(eec_source)) %>%
  knitr::kable()
```

Chemical	EEC	Source
2,4-D	762.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/24d_red.pdf
Ammonium Fertilizer	2272.664	N-study
Atrazine	102.000	https://doi:10.1038/s41467-018-03189-w
Azinphos-methyl	15.300	https://doi-org.libproxy.berkeley.edu/10.1016/S0045-6535(00)00601-9
Butachlor	202.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/0177red.pdf
Butralin	16.890	Epa report
Carbaryl	33.500	https://doi.org/10.1645/GE-2078.1
Carbofuran	36.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/carbofuran_red.pdf
Chlorpyrifos	64.000	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091
Cypermethrin	5.900	https://doi.org/10.1016/j.agwat.2012.01.009
Deltamethrin	4.520	https://doi.org/10.1016/j.agwat.2012.01.009
Diazinon	429.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/diazinon_red.pdf
Dichlorvos	2.330	https://archive.epa.gov/pesticides/reregistration/web/pdf/ddvp_ired.pdf
Dimethoate	33.400	https://archive.epa.gov/pesticides/reregistration/web/pdf/dimethoate_red.pdf
Endosulfan	7.600	https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/079401/07940
Esfenvalerate	1.030	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091

Chemical	EEC	Source
Fenitrothion	36.600	https://archive.epa.gov/pesticides/reregistration/web/pdf/0445.pdf
Fluazifop-p-butyl	56.600	https://www.gpo.gov/fdsys/pkg/FR-2017-09-27/pdf/2017-20748.pdf
Glyphosate	1300.000	https://link.springer.com/content/pdf/10.1007%2F978-1-4612-1156-3_2.pdf
Lambda-cyhalothrin	1.770	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091
Malathion	18.400	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091
Methyldemeton	12.400	https://archive.epa.gov/pesticides/reregistration/web/pdf/odm_red.pdf
Metolachlor	186.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/0001.pdf
Monocrotophos	21.300	https://archive.epa.gov/pesticides/reregistration/web/pdf/dicrotophos_red.pdf
MSMA	360.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/organic_arsenicals_red.pdf
Oryzalin	368.100	https://archive.epa.gov/pesticides/reregistration/web/pdf/0186.pdf
Other Fertilizer	4400.000	PLACEHOLDER
Oust	NA	NA
Paraquat	4.800	https://archive.epa.gov/pesticides/reregistration/web/pdf/0262red.pdf
Pendimethalin	31.000	https://archive.epa.gov/pesticides/reregistration/web/pdf/0187red.pdf
Permethrin	5.980	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091
Phosphamidon	NA	NA
Profenofos	15.380	https://doi.org/10.1016/j.agwat.2012.01.009
Quinalphos	4.000	https://pubs.acs.org/doi/pdf/10.1021/es00174a001
Terbufos	36.600	http://dx.doi.org/10.1016/j.chemosphere.2015.03.091
Tributyltin	13.700	https://archive.epa.gov/pesticides/reregistration/web/pdf/0099red.pdf
Trifluralin	7.010	https://archive.epa.gov/pesticides/reregistration/web/pdf/0179.pdf