

Data Appendix

Variable: Value of Repetitive Loss Property flood insurance claims paid by the NFIP [RLP Flood Claims Paid]

Source: Freedom of Information Act (FOIA) Request, FEMA 2014-FEFO-00535 from Mary McGee, Colgate University, Monday, December 7, 2015

Variable Description: Continuous variable representing given year's dollar amount of RLP flood claims paid to a state by the NFIP

Time Structure: Original data sent by Michael O'Hara from Mary McGee, who received the data from FEMA. The Data Cleaning code adjusts the data to include a year variable [Year_YYYY] for each state, so then there is an associated RLP claim value for each year for each state from 1995 to 2013. Note that an inverse sine hyperbolic transformation was used due to the amount of zero values and skewness. More details can be found in the code included in this documentation.

Figure 1A: Distribution of SRL Flood Claims (USD)

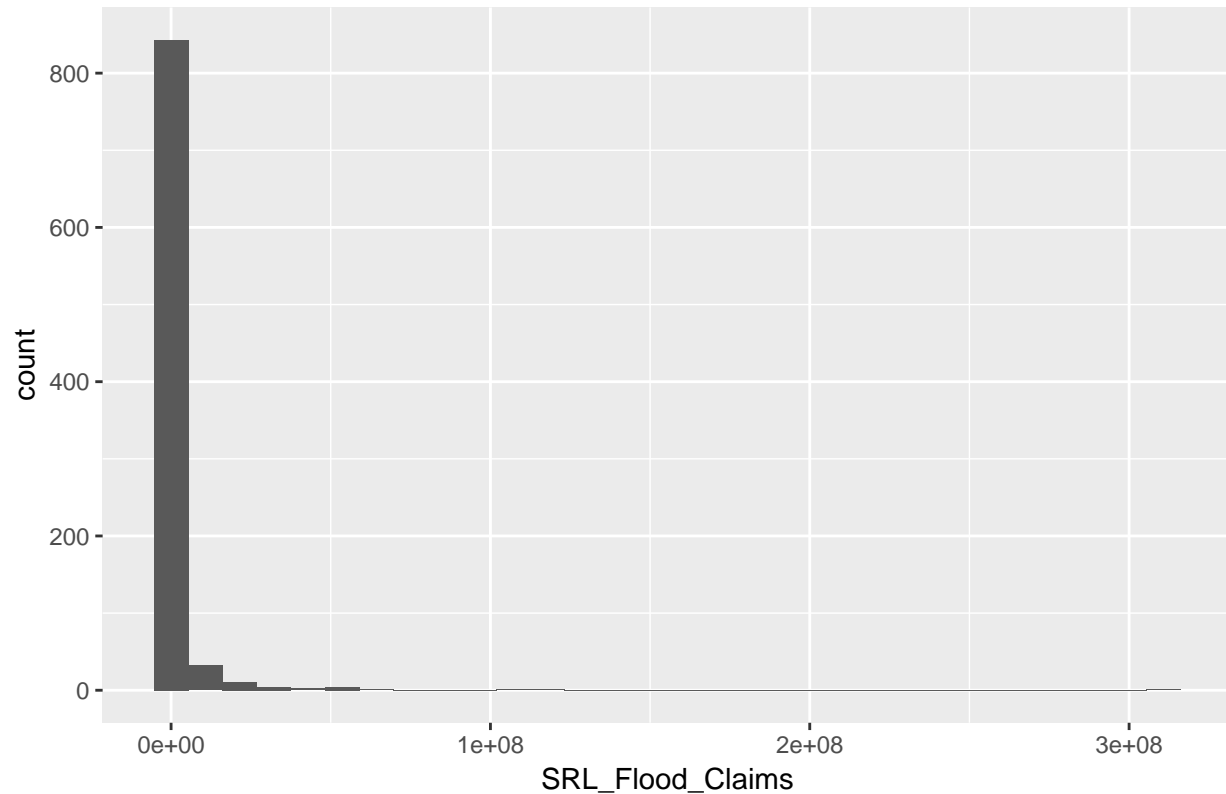
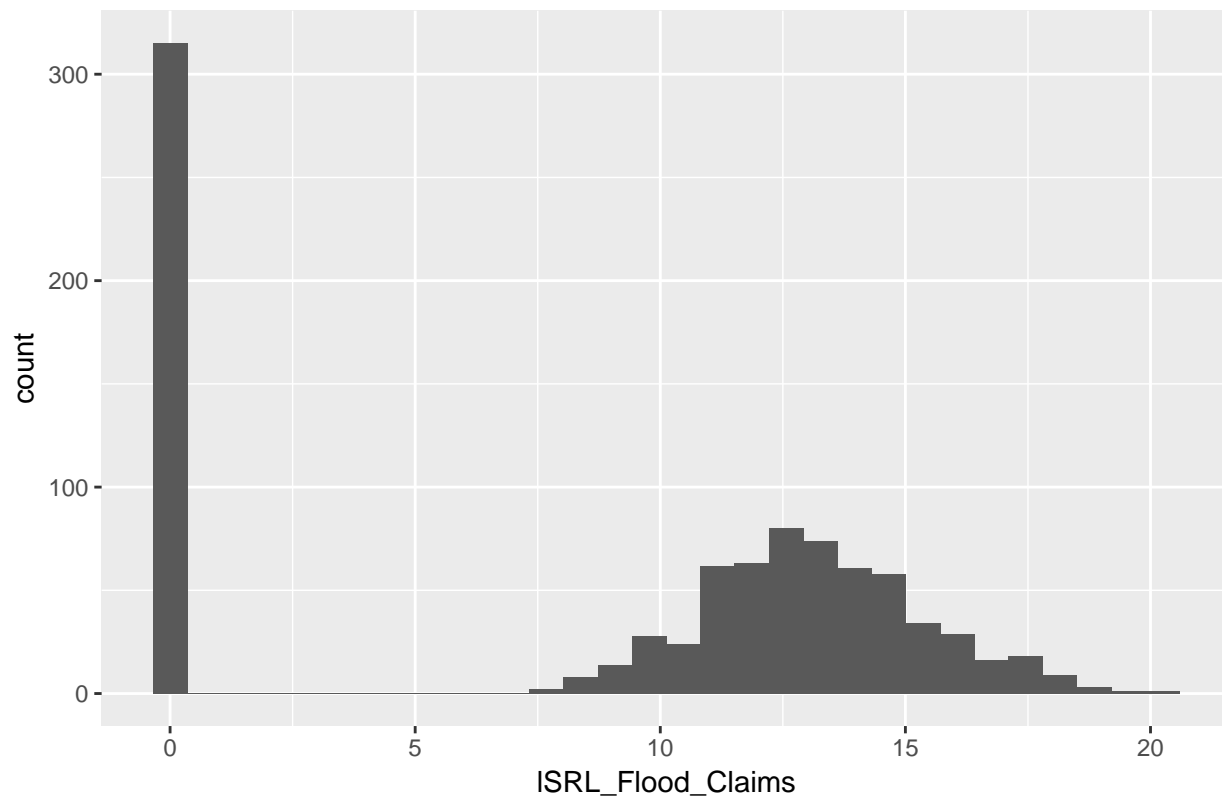


Figure 2A: Distribution of ISH transformation of SRL Flood Claims



Variable: Value of Residential Insured Severe Repetitive Loss Property flood insurance claims paid by the NFIP [SRL_Flood_Claims]

Source: Freedom of Information Act (FOIA) Request, FEMA 2014-FEFO-00535 from Mary McGee, Colgate University, Monday, December 7, 2015

Variable Description: Continuous variable representing given year's dollar amount of residential insured SRL flood claims paid to a state by the NFIP

Time Structure: Original data sent by Michael O'Hara from Mary McGee, who received the data from FEMA. The Data Cleaning code adjusts the data to include a year variable [Year_YYYY] for each state, so then there is an associated SRL claim value for each year for each state from 1995 to 2013. Note that an inverse sine hyperbolic (ISH) transformation was used due to the amount of zero values and skewness. More details can be found in the code included in this documentation.

Figure 3A: Distribution of RLP Flood Claims

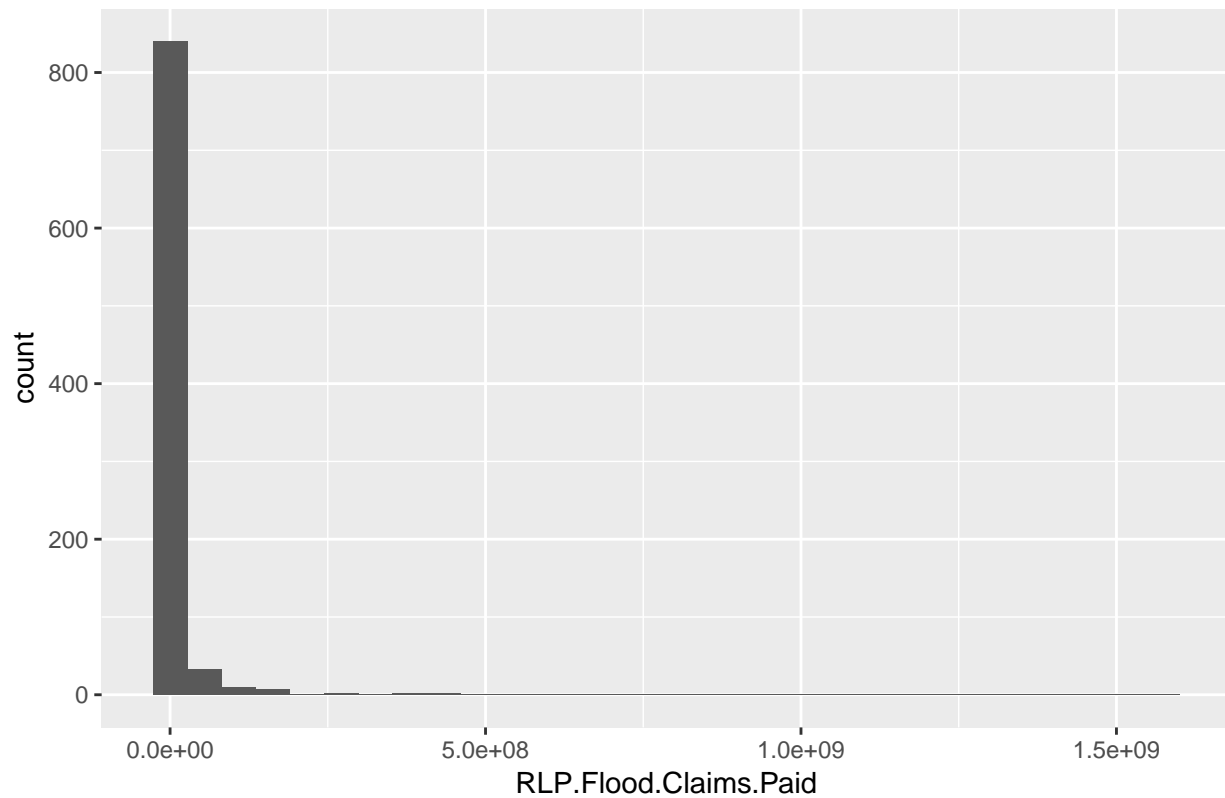
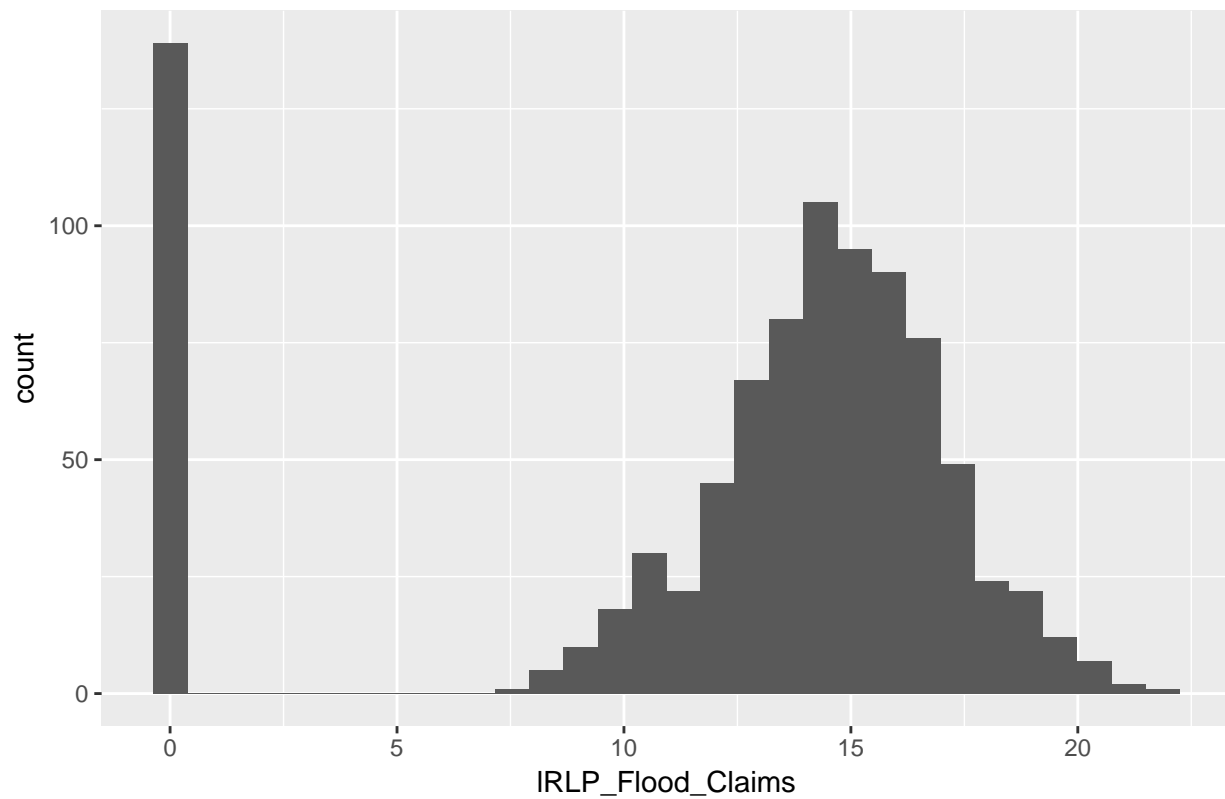


Figure 4A: Distribution of ISH transformation of RLP Flood Claims



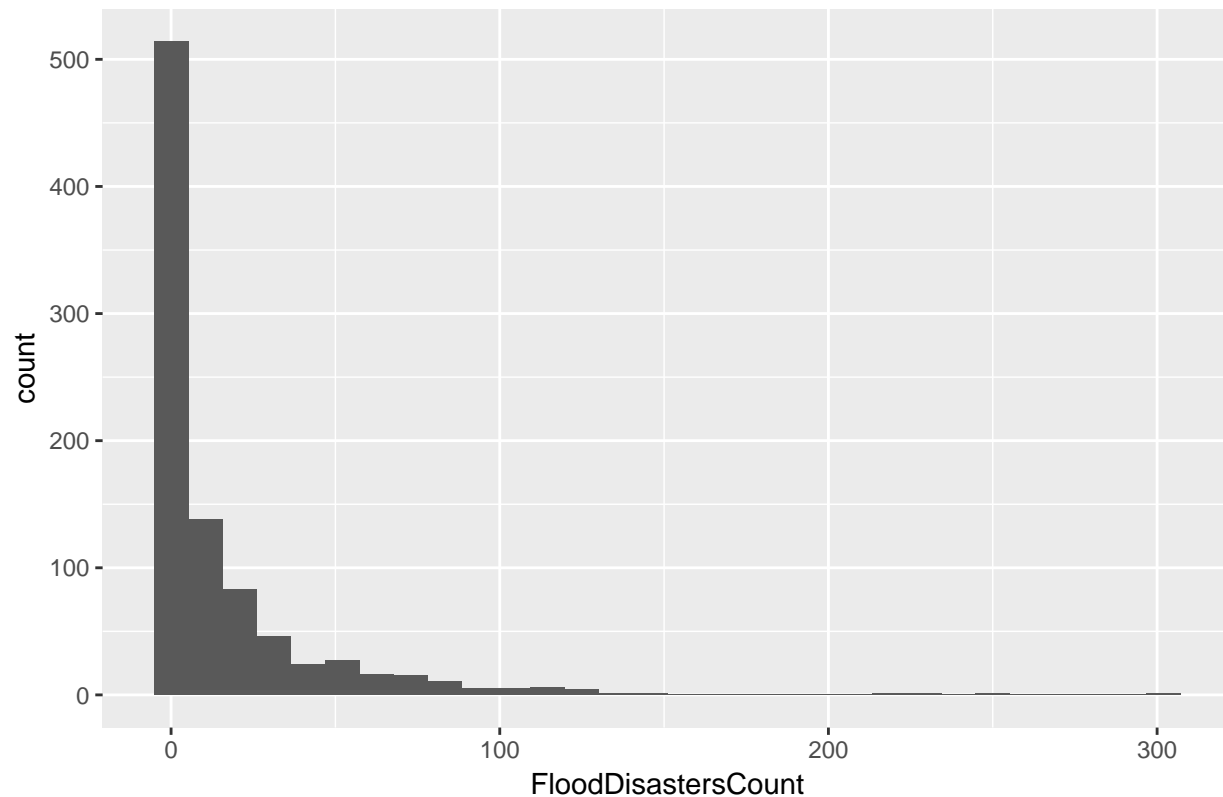
Variable: Number of county-declared flood related disasters [FloodDisastersCount]

Source: FEMA

Variable Description: Continuous variable representing the number of county-declared flood related natural disaster in that state in a year

Time Structure: Original data sourced from FEMA provides list of all county and state declared natural disasters from 1953 to 2015. The Data Cleaning code filters to natural disasters to include only county-declared flood-related events for 1996 to 2013. Each event is recorded along with the county and state it was declared in, the incident type, and an internal FEMA disaster title. The data was filtered for county-declared natural disasters that included flooding, such as floods, hurricanes, coastal storms, and typhoons, then I counted the number of these disaster for each state for each year using the Data Cleaning code. More details on the filter and count process can be found in the code included in this documentation.

Figure 5A: Distribution of County–Declared Flood Related Disasters



Variable: Property damage caused by natural disasters [Property_Damage_mmUSD]

Source: National Weather Service (NWS), National Oceanic and Atmospheric Administration (NOAA)

Variable Description: Continuous variable representing the amount of property damage in millions of USD in a given year caused natural disasters to a state

Time Structure: Original data sourced from <http://www.nws.noaa.gov/om/hazstats/state%5BYYY%5D.pdf> provides the amount of property damage in millions of USD in a that year 19/20[YY]. PDF files sourced from nws.noaa.gov were converted to xlsx files and compiled to create importable data file “PropertyDamage-Data.csv” which was imported in code. Note that an ISH transformation was used due to the amount of zero values and skewness.

Figure 6A: Distribution of Property Damage caused by disasters

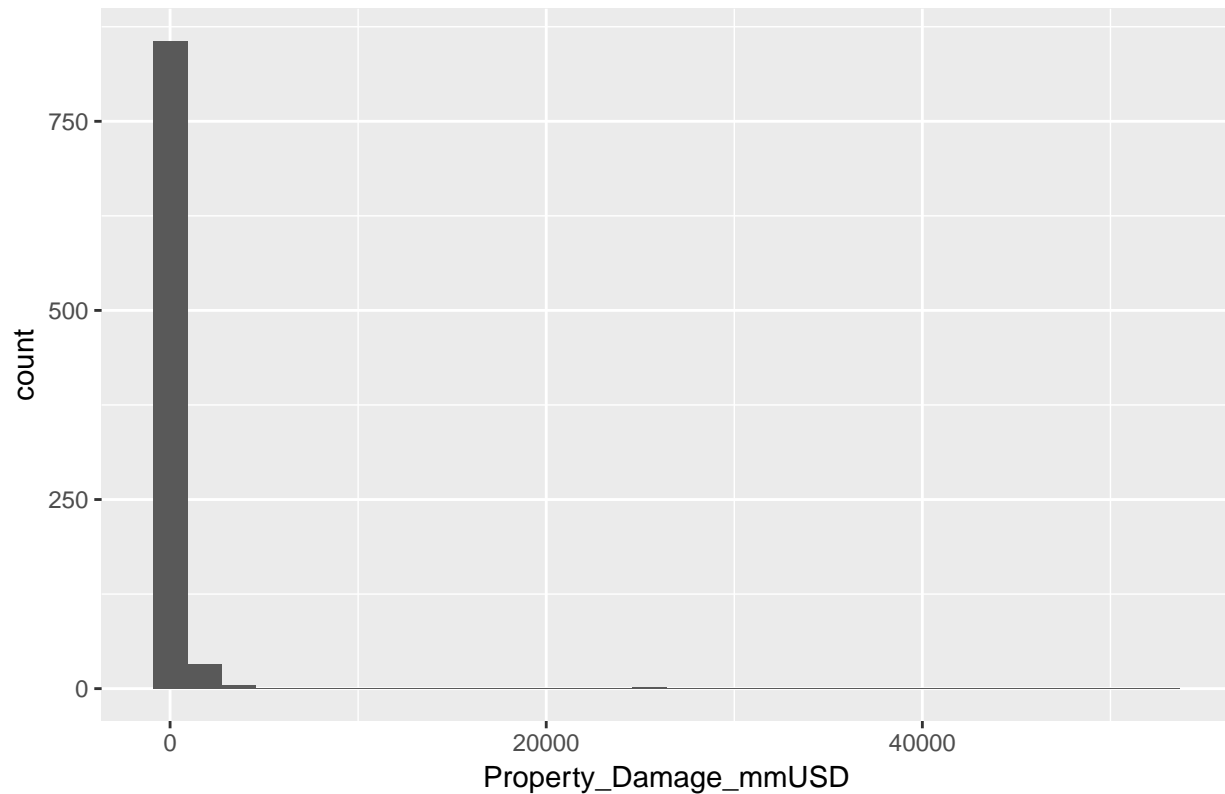
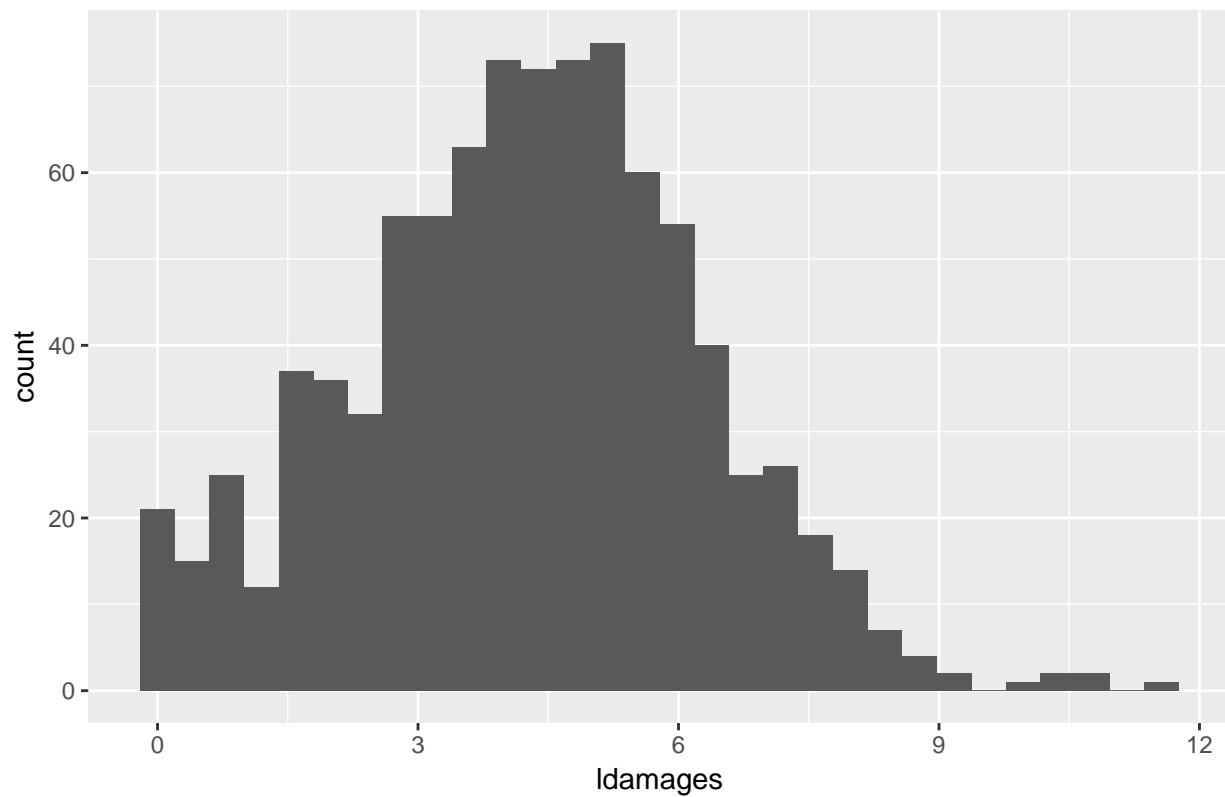


Figure 7A: Distribution of ISH transformation of Property Damage



Variables: Funds paid by FEMA through the FMA Program [FMA], the PDM Program [PDM, LPDM], the

RFC Program [RFC], the SRL Program [SRL], and the HMGP Program [HMGP]

Source: FEMA

Variable Description: Continuous variable representing the amount of money funded to a state in given year from the mitigation funds

Time Structure: Original data sourced from FEMA was representative of payout to state in a year for a specified project. Zero values were added to states and years where no money was funded from that grant program. The Data Cleaning code sums the funds granted for a state in a year. Note that an ISH transformation was used due to the amount of zero values and skewness. More details can be found in the code included in this documentation.

Figure 8A: Distribution of FMA Funds Paid

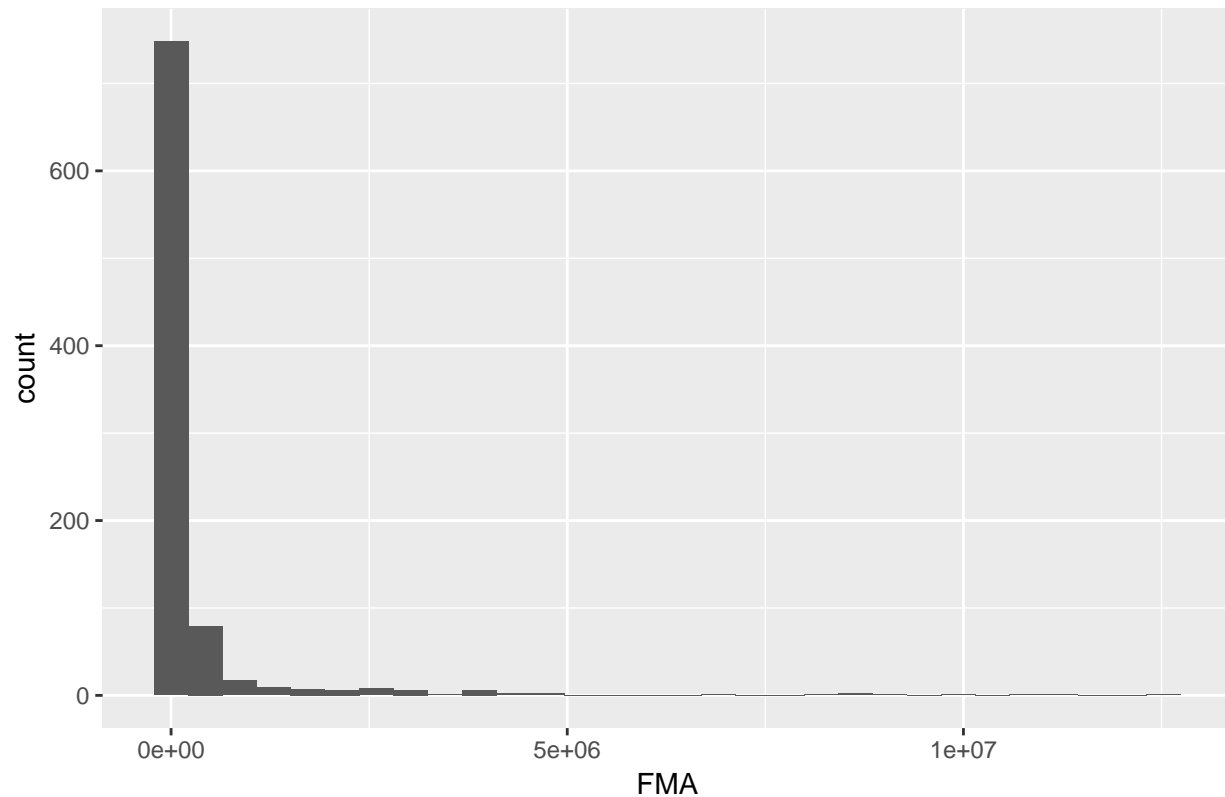


Figure 9A: Distribution of ISH transformation of FMA Funds Paid

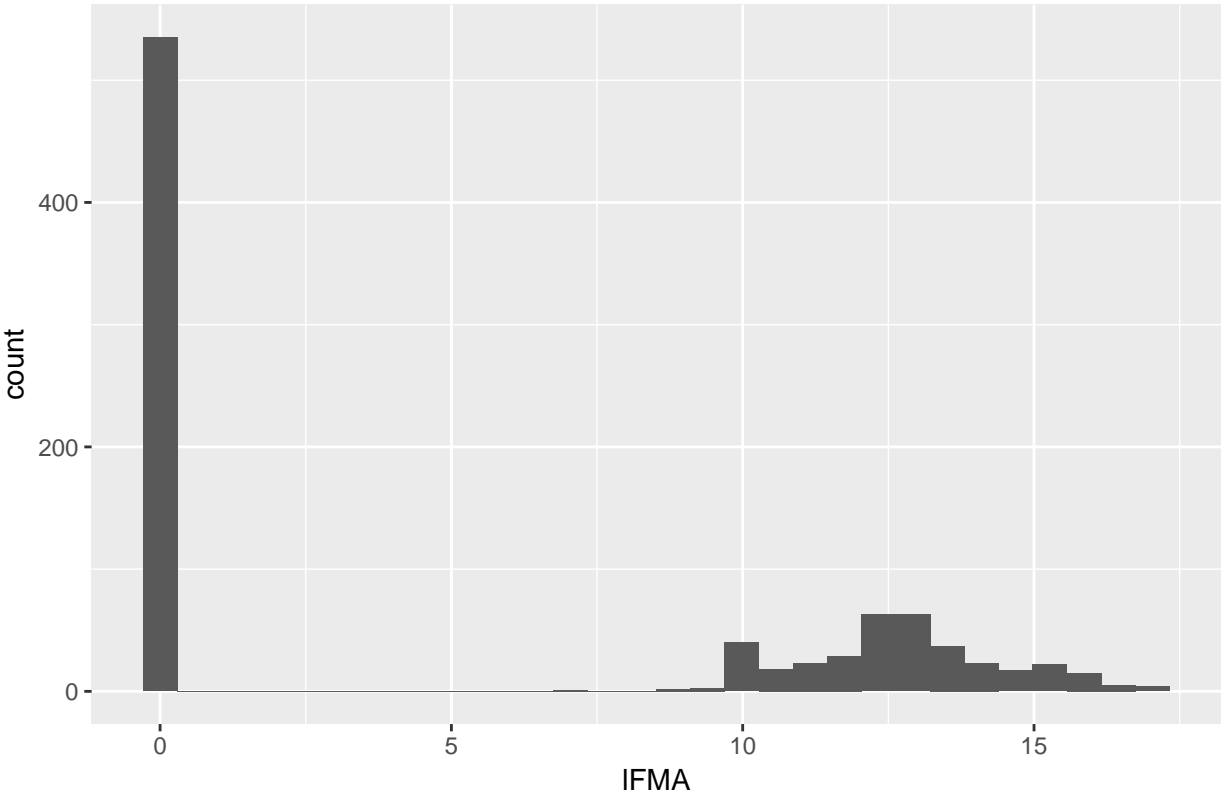


Figure 10A: Distribution of PDM Funds Paid

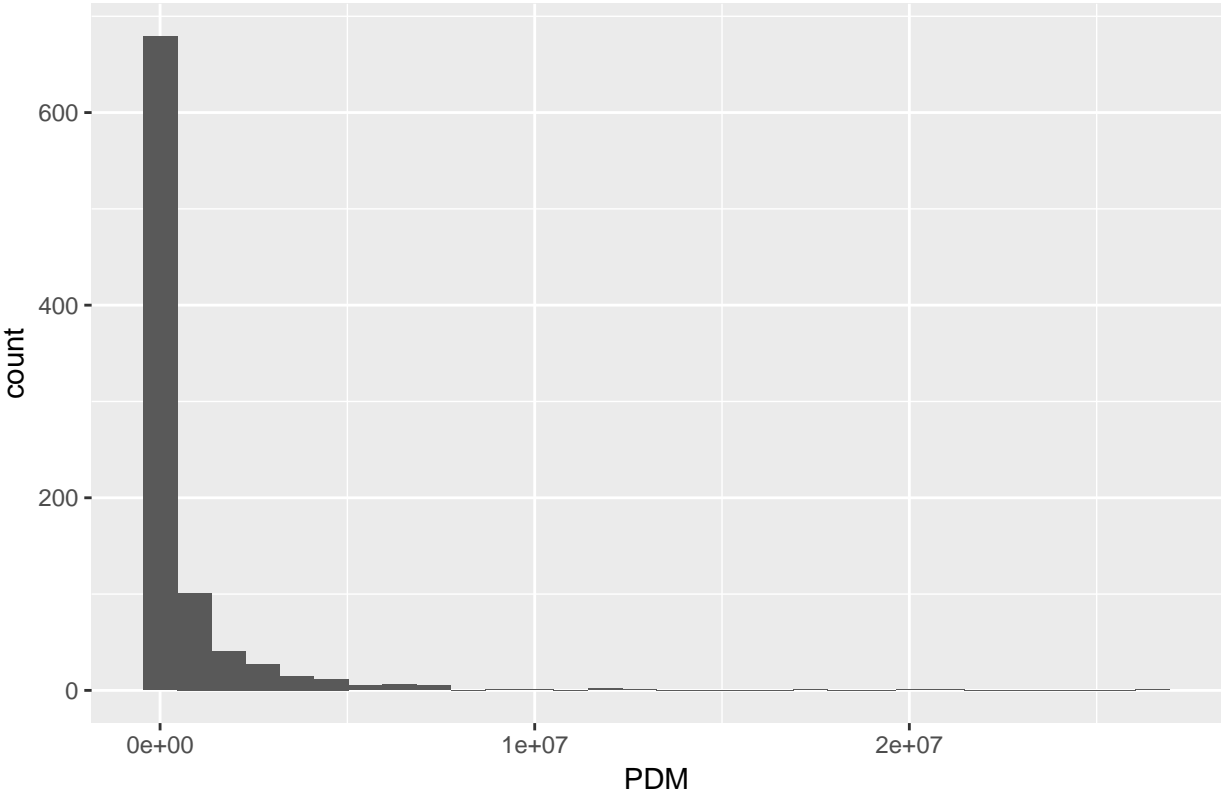


Figure 11A: Distribution of ISH transformation of PDM Funds Paid

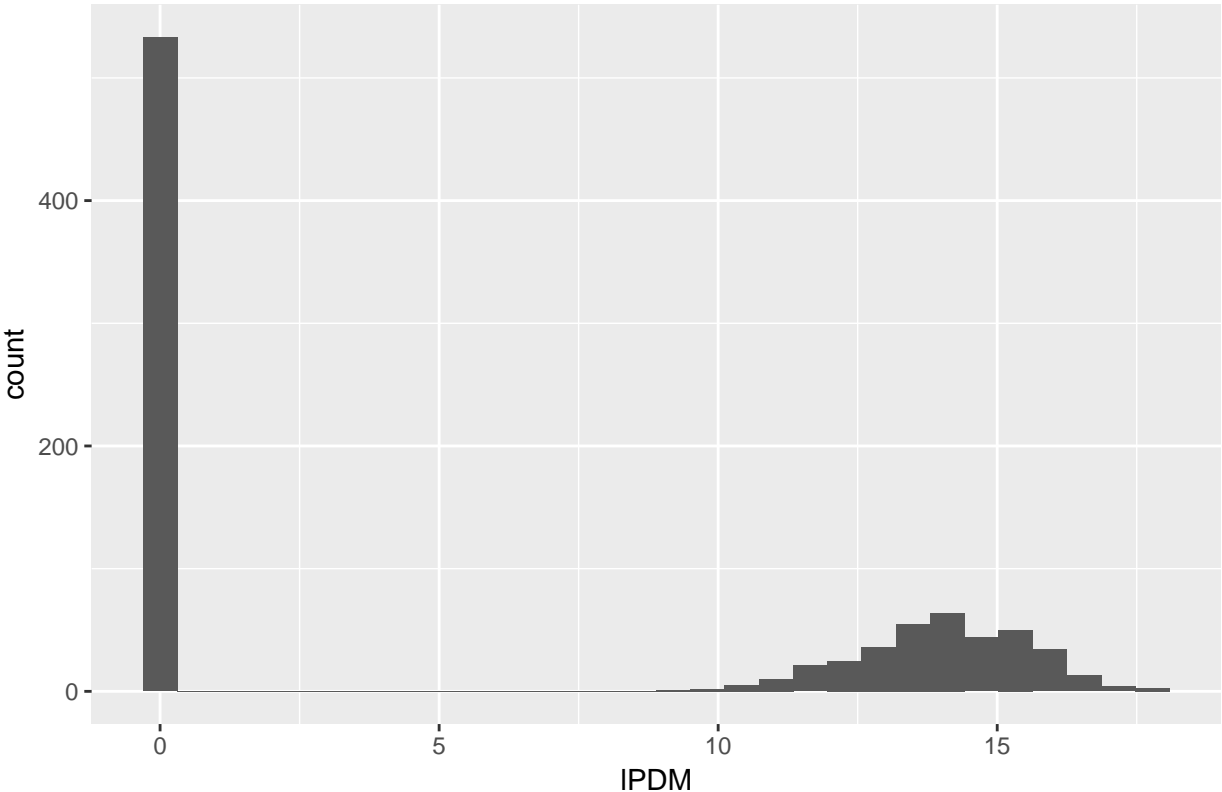


Figure 12A: Distribution of LPDM Funds Paid (2013 \$)

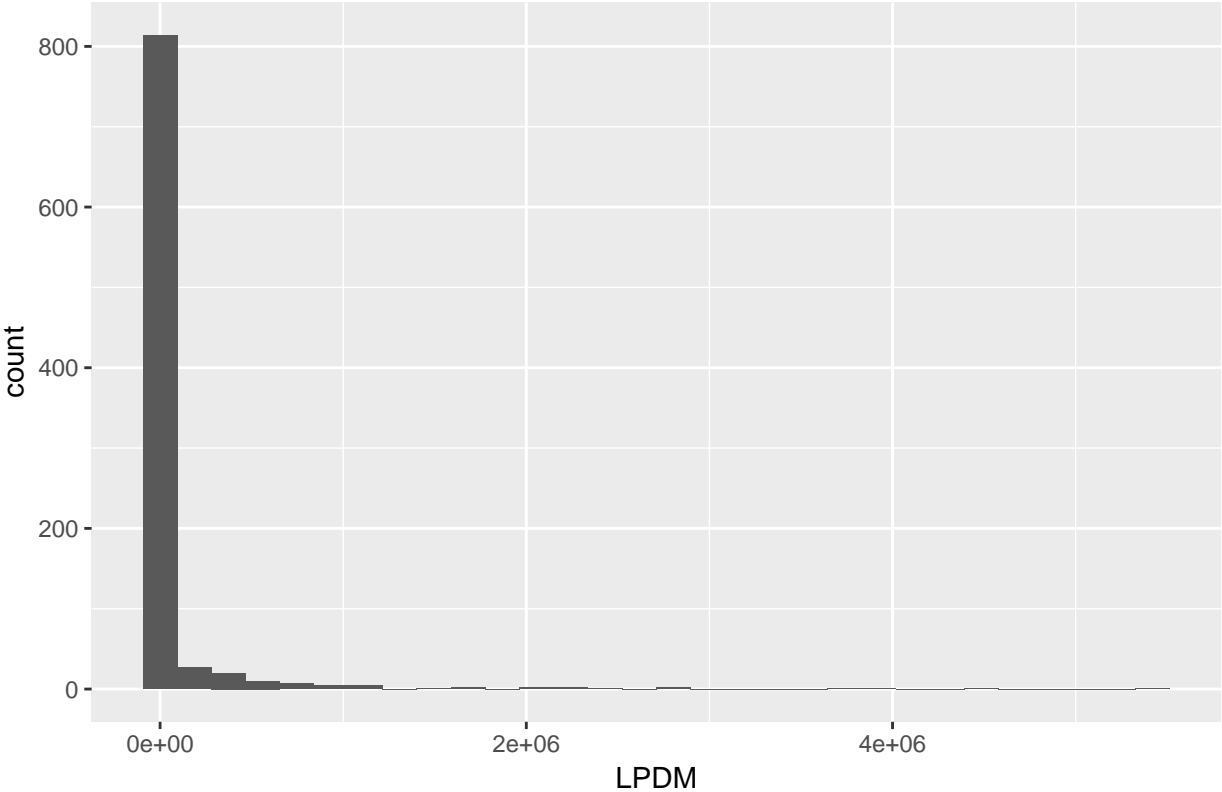


Figure 13A: Distribution of ISH transformation of LPDM Funds Paid

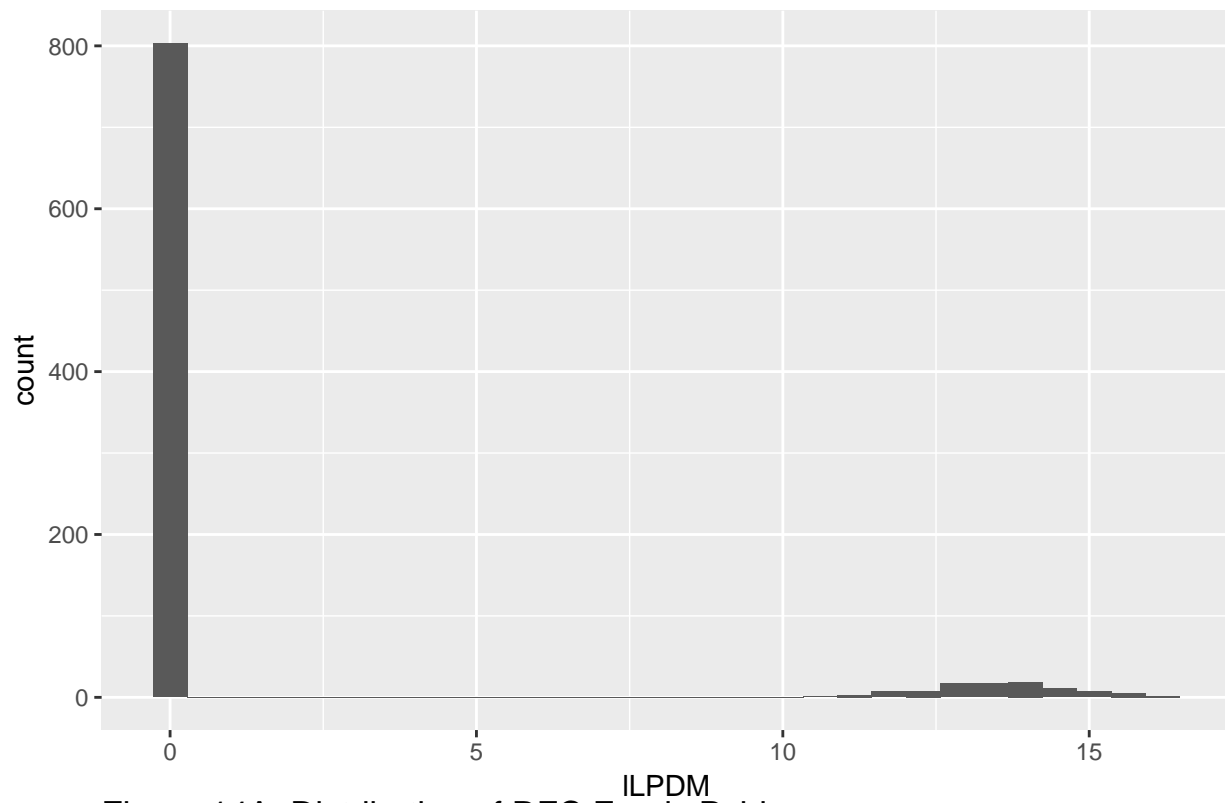


Figure 14A: Distribution of RFC Funds Paid

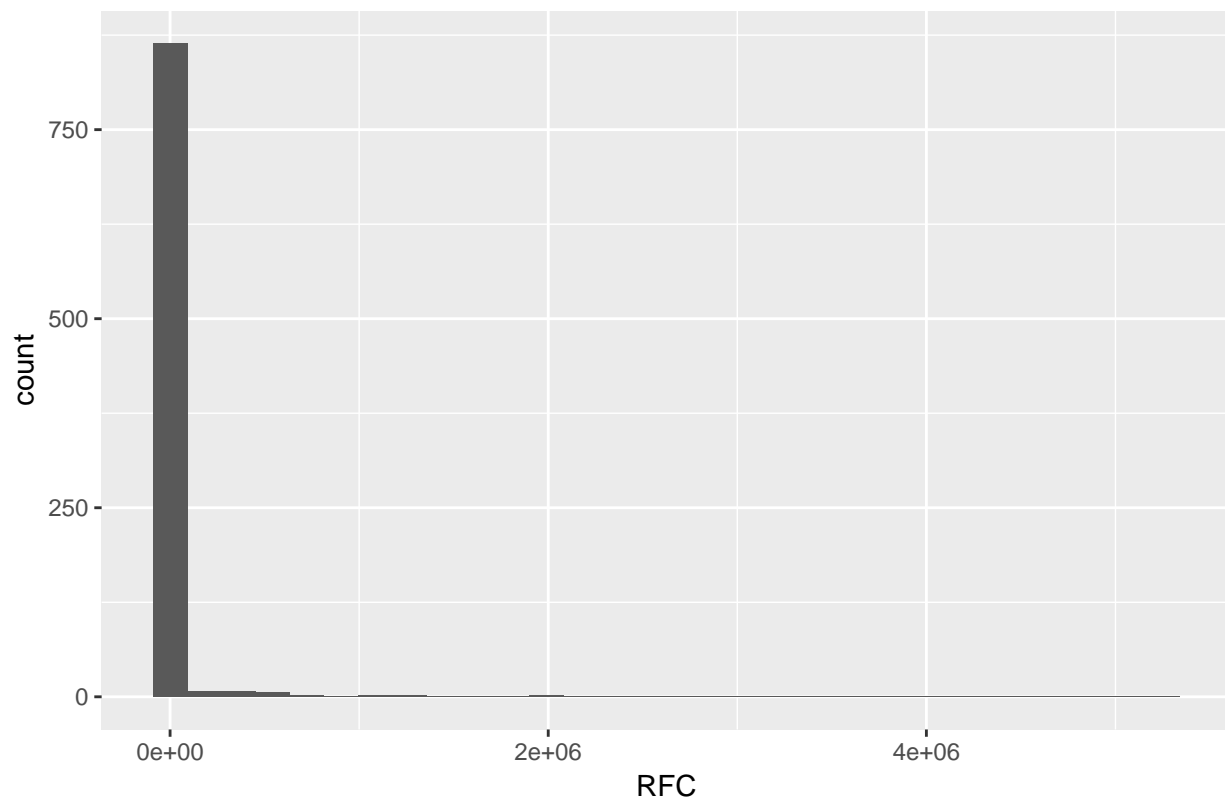


Figure 15A: Distribution of ISH transformation of IRFC Funds Paid

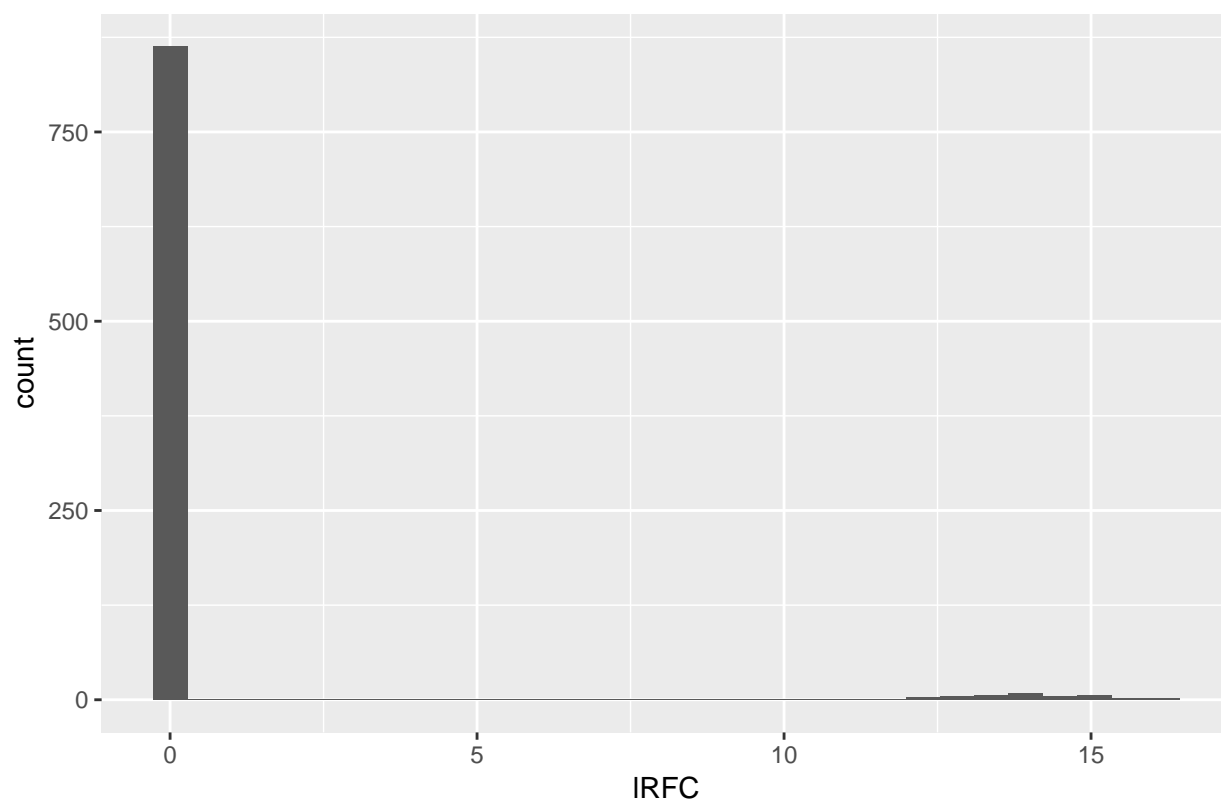


Figure 16A: Distribution of SRL Funds Paid

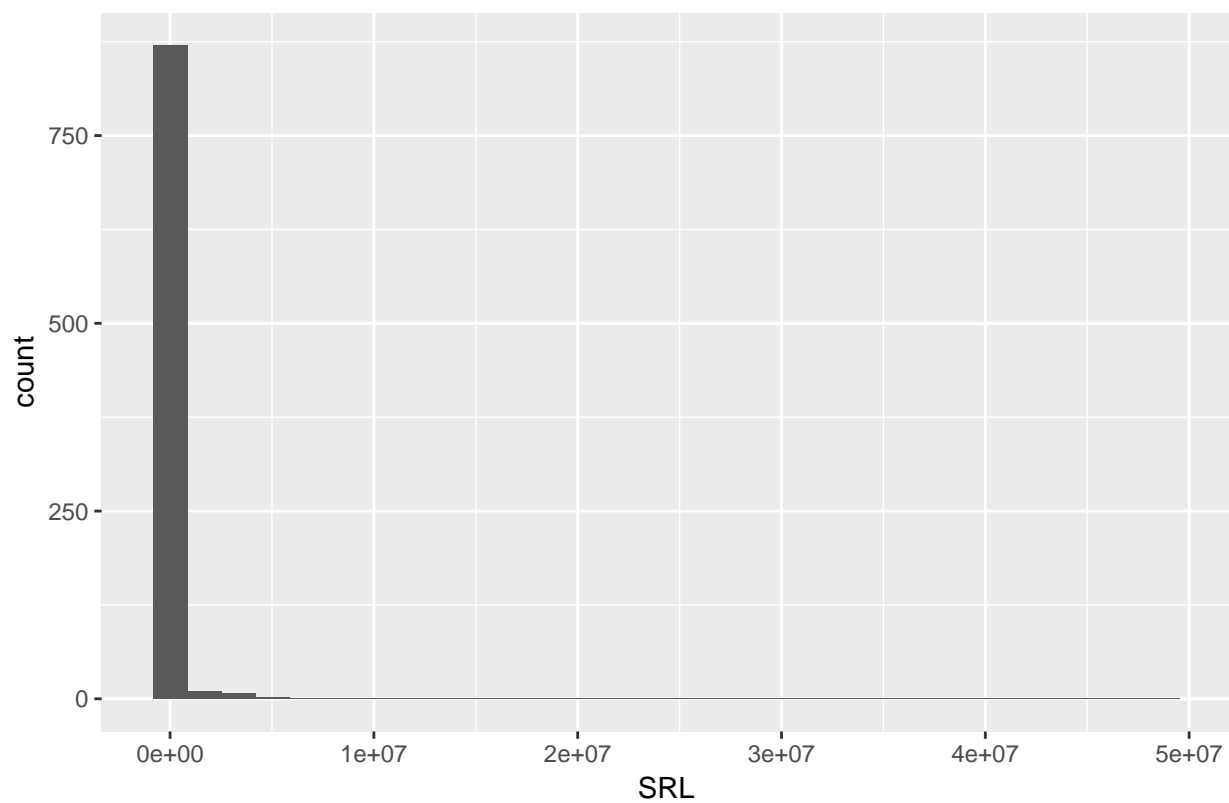


Figure 17A: Distribution of ISH transformation of ISRL Funds Paid

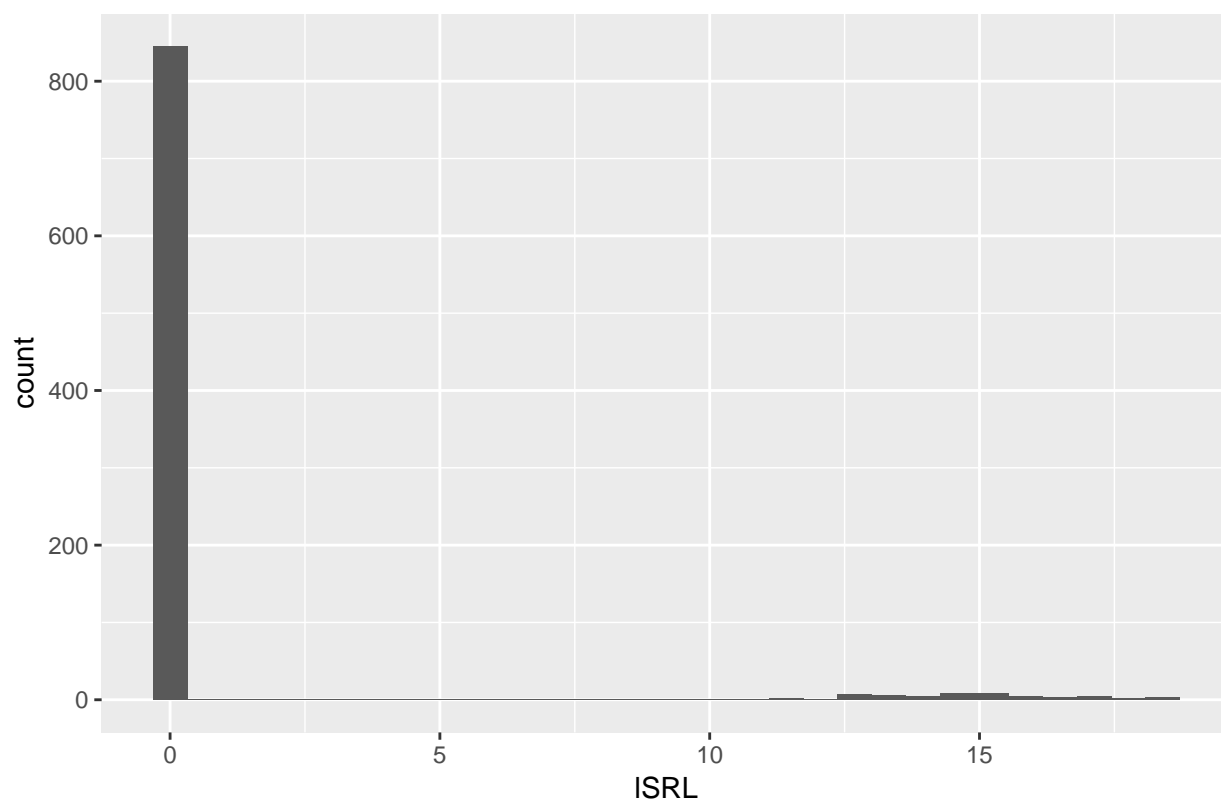


Figure 18A: Distribution of HMGP Funds Paid

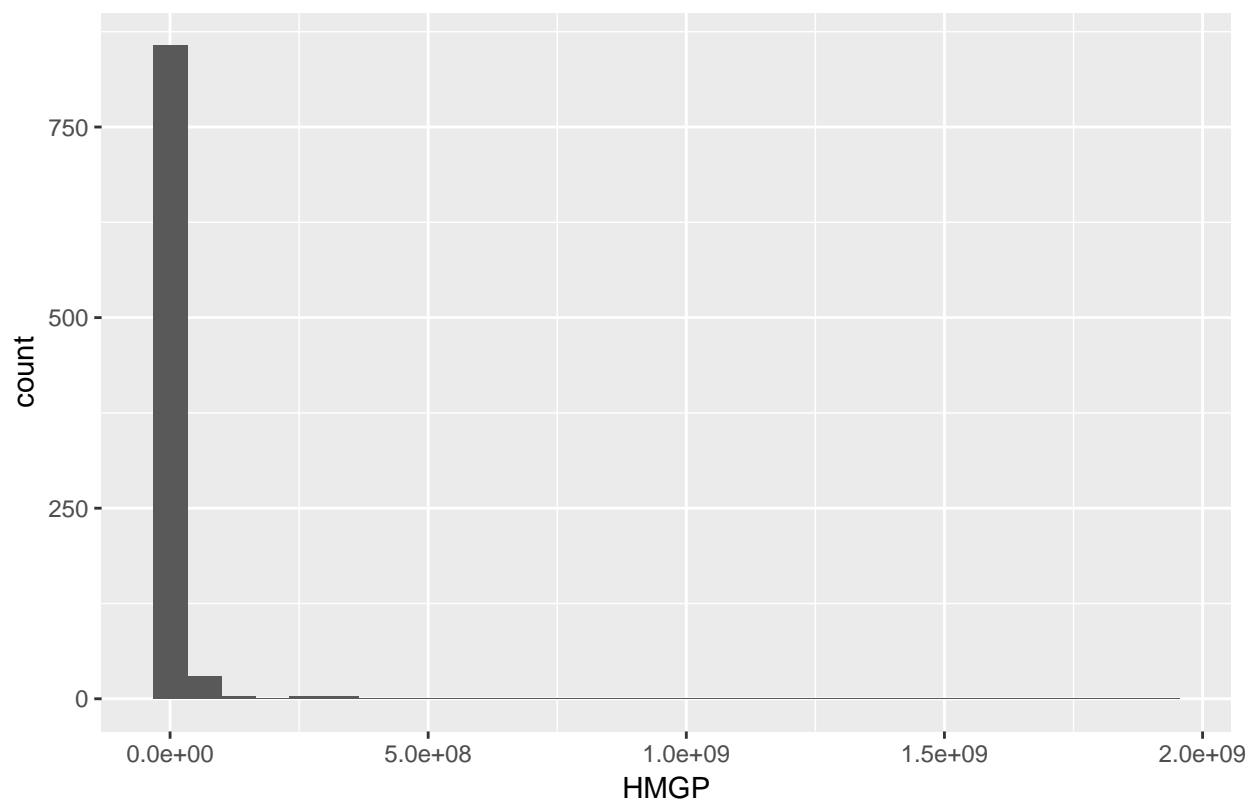


Figure 19A: Distribution of ISH transformation of HMGP Funds Paid

