APPENDIX F: ENVIRONMENTAL SUPPORTING DOCUMENTS

Appendix F-1: Environmental Justice
Appendix F-2: Cultural Resources
Appendix F-3: Recreation
Appendix F-4: Hazardous, Toxic, and Radioactive Waste
Appendix F-5: Wetland
Appendix F-6: Terrestrial
Appendix F-7: Waterfowl
Appendix F-8: Aquatic Resources

APPENDIX F-1: ENVIRONMENTAL JUSTICE

Methodology:

Environmental Justice is institutionally significant because of Executive Order 12898 of 1994 (E.O. 12898) and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations and to those populations challenged with environmental hazards. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, some other race, or a combination of two or more races. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2018 are those whose income are $25,094 for a family of four and are identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a census tract or block group with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level.

This resource is technically significant because the social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the proposed actions. This resource is publicly significant because of public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of Federal laws, regulations, policies, and actions. Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies[1].

The methodology, consistent with E.O. 12898, to accomplish this environmental justice (EJ) analysis includes identifying populations that are exposed to high levels of environmental stressors and are low-income or minority populations within the project area using up-to-date economic statistics, aerial photographs, and U.S. Census Bureau 2014-2018 American Community Survey (ACS) estimates. The U.S. Environmental Protection Agency (EPA) has developed a new EJ mapping and screening tool called EJSCREEN, which is based on nationally consistent data and an approach that combines environmental and demographic indicators in the form of EJ indexes. EJSCREEN relies on the 2014-2018 ACS 5-year summary file data. This information can help to highlight geographic areas and the extent to which they may be candidates for further review, including additional consideration, analysis, or outreach. The tools also allow users to explore locations at a detailed geographic level, across broad areas or across the entire nation. Environmental indicators typically are direct or proxy estimates of risk, pollution levels, or potential exposure (e.g., due to nearby facilities). Demographic indicators are often used as proxies for a community's health status and potential susceptibility to pollution. Environmental and demographic data and indicators may be viewed separately or in combination. See the EJSCREEN worksheets at the end of this appendix for the environmental indicators for the Study Area.

[1] https://www.epa.gov/environmentaljustice/learn-about-environmental-justice, accessed 10/16/2014.

Existing Conditions:

Issaquena and Sharkey County, Mississippi is the study area for the flood risk management EJ analysis. Both counties are majority non-white with 60 percent of the population in Issaquena County identifying as minority while about 75 percent of the population in Sharkey County identifies as minority. The largest minority in both counties identifies as Black/African American. The largest city in Sharkey County is Rolling Fork which is home to about half of the County population. Hispanic ethnicity is about 1 percent of the population.

Issaquena and Sharkey counties were used for this analysis because they are the largest counties and the entire county population is located within the study area. The remaining counties were only partially within the study area. Therefore, it was assumed that using Issaquena and Sharkey counties for this analysis is representative of the entire study area.

Table 1: Census Information

Location	Total Population	White	Black	Native American	Asian	Native Hawaiian	Some Other Race	Two or more Races	Minority	Hispanic
Issaquena County	1,328	521	799	0	0	0	8	0	60.2%	1.2%
Sharkey County	4,511	1,132	3,337	6	28	0	8	0	74.8%	0.1%
Hollandale (city)	2,293	377	1,903	0	0	0	9	4	83.0%	0.4%
Rolling Fork (city)	2,306	477	1,820	6	0	0	3	0	79.3%	0.0%
Mississippi	2,988,762	1,751,193	1,125,834	13,689	28,313	707	28,833	40,193	41.4%	3.0%

Source: U.S. Census Bureau, American Fact Finder, ACS 2014-2018.

Mississippi is one of the poorest states in America and has a sizeable minority population (Smith et al. 1999). The region of Mississippi known as the Delta is the poorest area of this already poor state and residents are known to experience low educational attainment and lack health insurance (Smith et al. 1999).

Nearly 42 percent of the population in Issaquena County and 26 percent of the population in Sharkey County lives below the poverty threshold of $25,094 for a family of four. The smaller towns of Hollandale and Rolling Fork also have high percentages of population living below poverty. For comparison purposes, about 20 percent of the population in the state of Mississippi lives at or below poverty level.

Table 2: Population within Study Area having Incomes Below Poverty

Location	Total Population*	Population having Income Below Poverty	Percent of Population Below Poverty
Issaquena County	1,328	554	41.7%
Sharkey County	4,511	1,168	25.9%
Hollandale (city)	2,293	731	31.9%
Rolling Fork (city)	2,306	602	26.1%
Mississippi	2,986,530	588,346	19.7%

*For Whom Poverty Status is Known

Source: U.S. Census Bureau ACS 2014-2018

Future Without-Project Condition:
The No Action Alternative would not provide flood risk reduction. Direct impacts to EJ communities include continued flood risk. Indirect impacts under the No Action Alterative include a higher potential for temporary displacement of minority and/or low-income populations because residents within the project area would remain vulnerable to flooding and may be forced to relocate to areas with risk reduction features in place. The flooding affects public roads and bridges, residential and nonresidential structures, other infrastructure, environmental resources, and agricultural, forested, and timber management lands. As a result, flooding has caused undue hardships and economic losses to residents of the area due to flooding of homes, disruption of sanitation facilities, lines of communications, and transportation and subsistence fishing. This flooding constitutes a major problem to residents and is a detriment to economic development of the Yazoo Study Area.

Future With-Project Impacts

Summary:
USACE concludes, consistent with Executive Order No.12898, 3 C.F.R.59-32, (2004), that the Proposed Plan as designed would benefit low-income and minority populations in the Yazoo Study Area. The vast majority of structures and homes would be better protected from flooding, there would be a discernible economic benefit separate from agricultural benefits, and the negative effects of extended duration backwater flooding on aquatic resources, wildlife, and recreational resources would be dampened. The addition and placement of 34 supplemental low flow groundwater wells in the upper extent of the basin will allow maximum benefit to the affected aquatic systems compared to placement lower in the drainage near the Yazoo Study Area. In all, improvement of environmental flows would benefit a total of 9,321 acres of stream habitat. EJ communities can expect improved aquatic conditions and a higher likelihood of more opportunities for subsistence fishing once the 34 supplemental low flow groundwater wells are operational.

The Proposed Plan will provide for risk reduction in interior flooding during backwater flood events. The Proposed Plan includes a structural feature, a 14,000-cfs pump located near Deer Creek, a nonstructural feature including acquisition and reforestation of agricultural lands from willing sellers only, and mitigation features including installation of 34 supplemental low flow groundwater wells and acquisition of frequently flooded agricultural lands in fee title and subsequent reforestation to offset unavoidable losses to wetlands, terrestrial, aquatic, and waterfowl resources. When activated, the pumps will lower the water surface of floods greater than the 1-year frequency flood, which will reduce the extent and duration of the flood.

The majority of the Yazoo Study Area is home to low-income or minority communities which meet the threshold criteria of at least 20 percent or more of households having incomes below poverty or area have a majority of residents identifying as a minority. Using EPA's EJSCREEN tool, updated analysis reveals a small but disadvantaged population. Of the approximately 9,000 people living in the Yazoo EJ Study Area, the majority of residents are low-income and minority. The per capita income is less than $19,000 per year. For household incomes, 25 percent earn less than $15,000 per year and 16 percent earn under $25,000 and 30 percent earn between $25,000 and $50,000 with 71 percent of the total households earning under $50,000 per year. Slightly less than 20 percent of the total population is over 65. (EPA 2019). For 2017, 22 percent of households within Mississippi Congressional District 2, which encompasses the potentially affected area, received Supplemental Nutrition Assistance Program (SNAP) benefits (USDA 2017). Just over 87 percent of households receiving SNAP identified as Black or African American, 57 percent housed at least one child under the age of 18, and 60.3 percent had incomes below the poverty line (USDA 2017).

The 2019 backwater flood was a historic flood event due to its extent and duration. However, its occurrence was not unexpected and similar events will likely occur again. Since the Yazoo Backwater levee was completed in 1978, backwater flooding events above 95 feet (NGVD 29) were predicted to occur at least every 10 years (USACE 1985). The flood peaked at 98.2 ft. inundating over half a million acres of land in the southern Delta from February to August of 2019.

Assumptions:

This section relies on data from EPA available via EJSCREEN, thus it includes any underlying assumptions contained within that data. EJSCREEN data uses 2014-2018 U.S. Census Data.

Mississippi is one of the poorest states in America and has a sizeable minority population (Smith et al. 1999). The region of Mississippi known as the Delta is the poorest area of this already poor state and residents are known to experience low educational attainment and lack health insurance (Smith et al. 1999). Yazoo Backwater Area Reformulation Study thoroughly analyzed Environmental Justice concerns with and without completed project and its various alternatives (USACE 2007). The study concluded that benefits far outweighed any potential adverse effects to low-income or minority populations. Data gathered since then has only further reinforced this conclusion; namely the devastation that long term flooding has had on at-risk communities and the adverse impacts of the completed project being far less than originally assumed.

Results:

Direct Impacts

Direct impacts to EJ communities within the Yazoo Study Area are generally positive and include a lower risk of flooding to: structures and automobiles, roads and agricultural crops, and improvements in resources for subsistence fishing and hunting. Three positive, direct impacts to EJ communities, from the with-project conditions, are presented in the following sections and include, 1) reduction in flood risk to structures and automobiles, 2) reduction in flood risk to agricultural crop lands and 3) improvement in subsistence fishing and hunting opportunities.

The purpose of the following section is to discuss the impacts of the Proposed Plan on the EJ communities within the Yazoo Study Area by showing 1) that there are flood protection benefits of the project to the low income or minority populations including to structures and agricultural crop lands and 2) that the impacts of the project would NOT negatively affect hunting and fishing, which some low income populations rely on for subsistence. The information presented herein demonstrates the benefits of the completed project to minority and low-income populations living within the affected area far exceed any detriments. This section presents updated data obtained since the 2008 Final Determination on Environmental Justice. In light of this new information, environmental justice concerns merit reconsideration. Benefits to low-income and minority populations within the affected area would receive far more benefit than harm from the completed project contrary to the above conclusion from 2008 Final Determination.

1. Positive With-Project Direct Impacts to Structures in EJ Communities Located in Areas Expected to Flood in the Yazoo Study Area

The structural effects of two project conditions: without the Yazoo Backwater pumps in place and with the pumps in place, (project complete), are shown below in Tables 3 and 4.

Under the without-project condition (Base), 1,307 structures in the Yazoo Study Area are located in areas that are likely to receive some level of flooding, either within the structure are around the structure, from

a 1-year to 100-year storm frequency event. The 10-year to 100-year frequency storm events pose the highest flood risk under the without-project condition, with 1,037 structures potentially flooding.

Under the with-project condition, EJ communities should see a reduction in risk of neighborhoods flooding, as all 1,307 structures have a lower flood risk compared to the existing (base) condition. Under base conditions, 1,307 structures are shown to be at risk to receive some level of flooding. The pumps help reduce flooding from all storm events, while the pumps help reduce flood risk associated with the 50- and 100-year events the most. Cumulatively, for all storm events, the with-project condition reduces the number of structures at risk for flooding by 646 (1,307-661), which is about half of the structures that were receiving some level of flooding under without-project condition. The remaining 661 structures in the Yazoo Study Area would continue to see some level of flood risk, but from higher storm frequencies (i.e. 1- and 2-year events) which normally correlates to lower flood risk.

Table 3: Structures Located within Inundated Areas*
by Storm Frequency, without- and with-Project

Frequency	Existing Condition (Base)		With-Project	
	Structures	Cumulative	Structures	Cumulative
1-year	58	58	48	48
2-year	56	114	31	79
5-year	156	270	107	186
10-year	226	496	91	277
20-year	194	690	80	357
50-year	257	947	164	521
100-year	360	1307	140	661

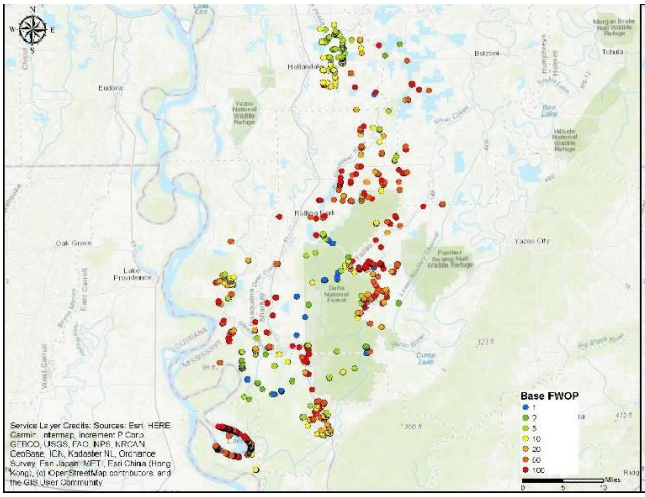
*Structures may or may not be inundated, but area around the structure is, at a minimum, inundated.

Location of Structures within EJ Communities and Flood Risk Reduction Benefits from the Completed Project

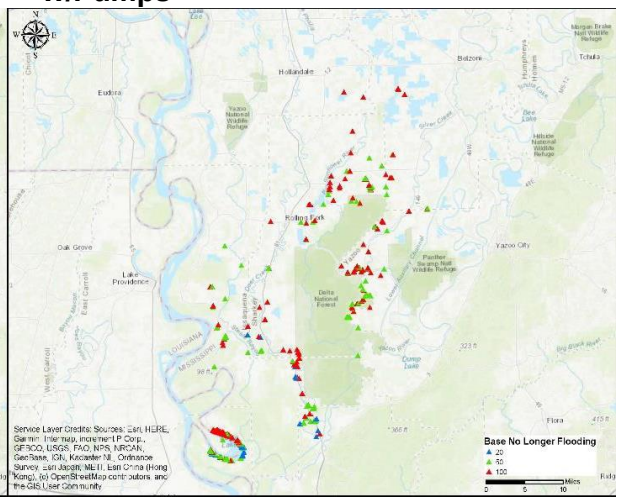
Map 1, below left, shows the 1,307 structures that are located in areas receiving some level of flooding under the base condition. Structures are spread throughout the Yazoo Study Area and are mainly impacted by less frequent events, such as by the 50- and 100-year events.

Map 2, on the right, shows the pumps in place condition and the structures (646) that are expected to no longer be in an area flooding from any event. The triangles represent structures that are expected, according to H&H modeling, to no longer be in an area flooding under any storm frequency with the pumps in place. Additionally, the color of the triangle shows at what event the structure location was flooding under base conditions. All of the structures expected to receive full benefit from the pumps were being exposed to flooding from 20-, 50- and 100-year events, storms that occur less frequently but bring more flooding than the higher frequency storms, such as the 1- and 2-year. As reported in the above paragraphs, there are 646 structures that will no longer be impacted from 100-year and less storm events. This a direct, positive impact to EJ communities that is spread throughout the Yazoo Study Area.

Map 1: Structures located in Inundated Areas, Base Condition

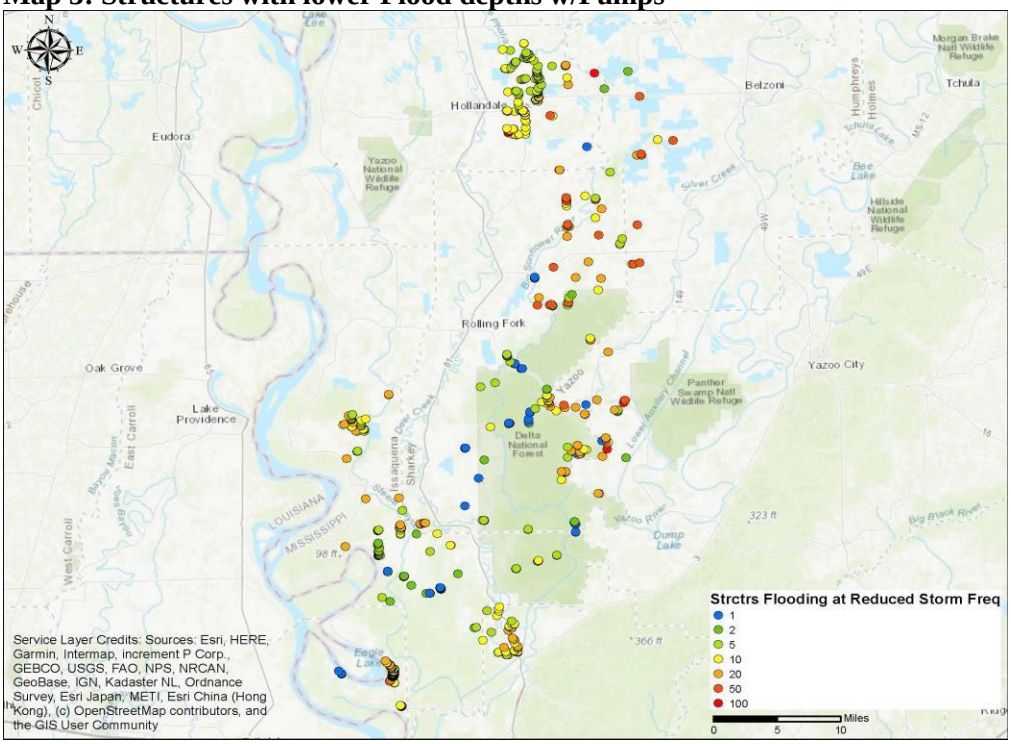


Map 2: Structures no longer Inundated w/Pumps



Map 3, below, shows the structures that are in areas that were flooding under base conditions that will continue to flood under with project conditions or with the pumps in place. However, the storm events flooding these structures is lowered from the color shown in the legend. If a structure under base conditions was being impacted by a 50-year event, then that structure may now be impacted by a 1-year event, again a more frequent storm event normally resulting in less flooding. There are 661 structures that fall into this category of still potentially flooded but from higher frequency events and normally lower flood depths. Both maps show improving conditions with the pumps in place. The affected population is predominantly low-income and minority, the project is anticipated to benefit the EJ communities.

Map 3: Structures with lower Flood depths w/Pumps



2. Positive with-project impacts on structures, automobiles and agricultural crops in EJ Communities

Approximately 436 residential structures will no longer flood (at the first floor elevation) from the 100-year event. The number of residential structures benefiting (no longer flooding at first floor elevation) from the with-project condition varies by storm frequency, with 50 structures benefiting under the 5-year event, 130 for the 10-year event, 206 benefit under the 20-year event, and 336 under the 50-year storm event. All of these structures are located in EJ communities in the Yazoo Backwater Study area.

Table 4: Structures or Automobiles No Longer Flooding with Pumps in Place, by Frequency, YBW 2020.

Economic Reaches 1 and 2	1YR	2YR	5YR	10YR	20YR	50YR	100YR
RES	-	-	50	130	206	336	436
NONRES	-	-	2	8	22	33	42
AUTO	-	1	34	103	157	248	345

EJ communities are expected to benefit from reduced damages to agricultural crops in the Yazoo Backwater study area. With existing conditions, the annual damages to the number of agricultural acres total 36,600 while with the pumps in place, the annual agricultural acres damaged decreases to 7,900. The agricultural crop acres benefited are expected to be 28,700 acres per year over the life of the project.

3. Subsistence Fishing and Hunting

Subsistence hunting and fishing has and continues to be a vital supplemental food source for select populations (Brown and Toth 2001). EJ community impacts to subsistence fishing and hunting can be based on impacts to aquatic resources which are both negative and positive. Negative cumulative impacts include a reduction in the areal extent and associated volume of flooded acres with most occurring at short durations and depths of less than 1.0 feet. While a reduction in the quantity of the habitat is apparent, positive cumulative impacts to aquatic resources will occur via improvements to habitat quality. Interannual variations in stage and durations of inundated areas may results in stagnant, hypoxic conditions which can result in total loss of aquatic communities. The alternative mitigation measures including re-establishment of perennial flows with supplemental low flow groundwater wells which will work together to improve habitat quality. In all, improvement of environmental flows would benefit a total of 9,321 acres of stream habitat. EJ communities can expect improved aquatic conditions and a higher likelihood of more opportunities for subsistence fishing once the 34 supplemental low flow groundwater wells are operational.

Thirty four supplemental low flow groundwater wells placed primarily along Highway 1 extending from near Clarksdale (Coahoma County) south to Arcola (Washington County) are proposed to augment stream flows in multiple systems within the Yazoo drainage. Supplemental flows will be conveyed during months when mean monthly discharge rates for streams in the system are at their lowest. Placement of the wells in the upper extent of the basin will allow maximum benefit to the affected aquatic systems compared to placement lower in the drainage near the Yazoo Study Area. For three illustrative examples of benefits gained to aquatic systems through the use of supplemental low flow groundwater wells, refer to the Aquatics Appendix.

4. Downstream EJ Impacts

Hydraulic Analysis performed by Vicksburg District Hydraulics Branch indicates that water levee could rise approximately 2-3 inches on the Yazoo River side of the YBW Pump Station during operation. The same analysis also indicates that stages on the Mississippi River near the Vicksburg gage could rise 1-2 inches during operation of the pump station. We feel that this minor increase in stages would be nearly immeasurable on any gaging station in the area due to the immense volume of water that would be present in the area when criteria was met to operate the pump. Furthermore, the margin of error for our hydraulic analysis is +-0.5 ft. and the estimated impacts fall well below that threshold. Therefore impacts to EJ communities downstream are expected to be minimal.

Indirect Impacts:

Indirect impacts to EJ communities may occur resulting from construction activities associated with installation of the pumps and other associated improvements of the Proposed Plan. Population groups residing or working near the construction site itself may experience minor, adverse indirect impacts due to the added traffic congestion and construction noise and dust. EPA's EJSCREEN environmental indicator, "Traffic Proximity and Volume", shows the area to be at the 13th percentile in the state, which indicates 87 percent of the state has higher traffic volume and is not, compared to the state, an existing environmental risk. Truck traffic and noise along roads, highways and streets during project construction would cease following completion of construction activities. There may also be a degradation of the transportation infrastructure, primarily local roads and highways, as a result of the wear and tear from transporting construction materials. Indirect impacts related to construction activities are expected to be short-term and minor. Best management practices will be utilized to avoid, reduce, and contain temporary impacts to human health and safety.

Indirect impacts associated with changing hydrology due to operations under the Proposed Plan will impact some wildlife species. However, impacts will vary over the short- and long-term with differential effects between species (Appendix Aquatic Resources, Terrestrial, Migratory birds, and Waterfowl). While impacts for select species will be moderate in the short-term, indirect impacts to wildlife are considered negligible over the long-term.

Regarding subsistence hunting, impacts associated with construction and operation of the Proposed Plan are anticipated to be negligible and may even yield positive effects on wildlife over the life of the project. Prevention of prolonged duration inundation events would reduce periods of extreme habitat reduction due to flooding and associated density-dependent resource reductions for both aquatic and terrestrial organisms (i.e., shade, food, normoxic water). Furthermore, predation associated with flooding induced concentration of wildlife populations may also be avoided. Finally, implementation of reforested mitigation lands in addition to alternative mitigation measures are anticipated to more than offset the habitat reduction associated with hydrologic change due to operations under the Proposed Plan. EJ communities may expect more opportunities for wildlife hunting under the with-project condition.

Cumulative Impacts:

Positive cumulative impacts to minority and/or low-income populations, including lower flood risk, are expected to occur as a result of the pumps. If these projects and other federal, state and local projects encourage regional economic growth, any additional jobs created may benefit minority and/or low-income groups living within the Yazoo Study Area.

EPA EJSCREEN Report (Version 2019)

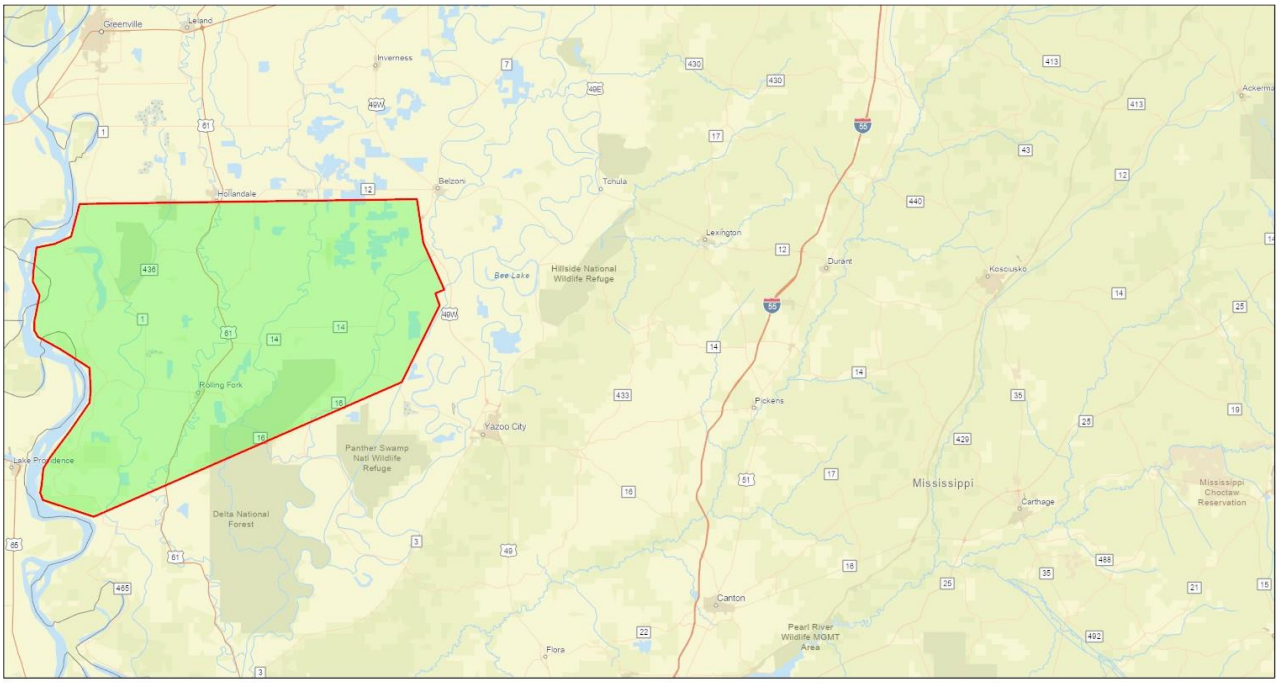
the User Specified Area
MISSISSIPPI, EPA Region 4
Approximate Population: 7,800
Input Area (sq. miles): 821.38

Northern Study Area

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	71	74	77
EJ Index for Ozone	73	75	76
EJ Index for NATA* Diesel PM	66	66	68
EJ Index for NATA* Air Toxics Cancer Risk	68	73	77
EJ Index for NATA* Respiratory Hazard Index	67	72	76
EJ Index for Traffic Proximity and Volume	70	65	64
EJ Index for Lead Paint Indicator	84	87	82
EJ Index for Superfund Proximity	59	64	65
EJ Index for RMP Proximity	77	74	74
EJ Index for Hazardous Waste Proximity	55	59	61
EJ Index for Wastewater Discharge Indicator	75	81	79

This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

Northern part of Yazoo Study Area



August 17, 2020

Northern Study Area

1:577,791

0 5 10 20 mi

0 5 10 20 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State		EPA Region		USA	
		Avg.	%tile	Avg.	%tile	Avg.	%tile
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	8.09	8.56	4	8.59	35	8.3	41
Ozone (ppb)	38	38	44	40	38	43	21
NATA* Diesel PM (µg/m³)	0.153	0.263	22	0.417	<50th	0.479	<50th
NATA* Air Toxics Cancer Risk (risk per MM)	32	39	5	36	<50th	32	50-60th
NATA* Respiratory Hazard Index	0.44	0.56	5	0.52	<50th	0.44	50-60th
Traffic Proximity and Volume (daily traffic count/distance to road)	24	120	44	350	24	750	17
Lead Paint Indicator (% pre-1960s housing)	0.26	0.16	82	0.15	81	0.28	58
Superfund Proximity (site count/km distance)	0.012	0.064	13	0.083	12	0.13	6
RMP Proximity (facility count/km distance)	0.24	0.54	62	0.6	50	0.74	44
Hazardous Waste Proximity (facility count/km distance)	0.027	0.27	6	0.52	2	4	2
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	3E-05	0.035	58	0.45	58	14	49
Demographic Indicators							
Demographic Index	68%	43%	81	38%	88	36%	88
Minority Population	70%	43%	77	38%	81	39%	78
Low Income Population	67%	44%	83	37%	90	33%	92
Linguistically Isolated Population	0%	1%	80	3%	51	4%	45
Population with Less Than High School Education	29%	17%	88	13%	91	13%	89
Population under Age 5	5%	6%	35	6%	38	6%	36
Population over Age 64	19%	15%	76	16%	71	15%	74

*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

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EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

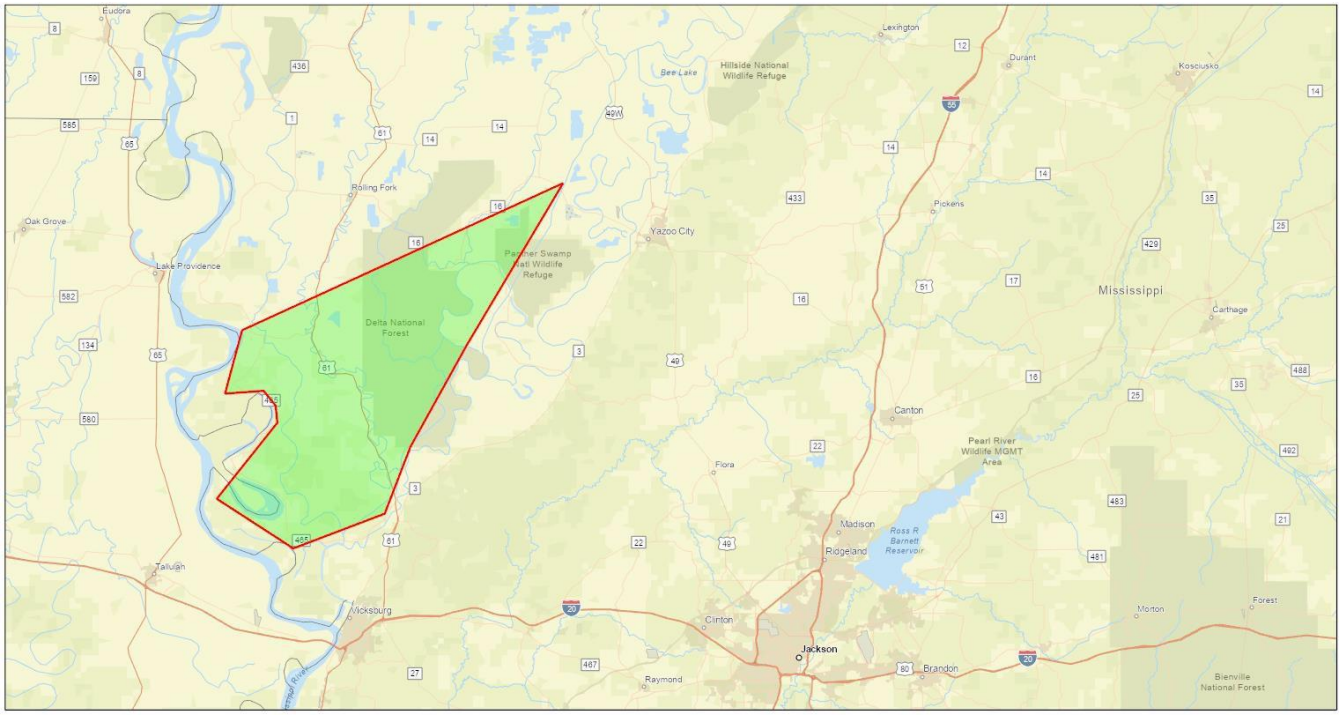
EJSCREEN Report (Version 2019)

the User Specified Area
MISSISSIPPI, EPA Region 4
Approximate Population: 1,126
Input Area (sq. miles): 434.36
Southern Study Area

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	54	62	65
EJ Index for Ozone	55	62	65
EJ Index for NATA* Diesel PM	51	58	62
EJ Index for NATA* Air Toxics Cancer Risk	52	61	65
EJ Index for NATA* Respiratory Hazard Index	52	61	65
EJ Index for Traffic Proximity and Volume	63	60	61
EJ Index for Lead Paint Indicator	57	68	68
EJ Index for Superfund Proximity	49	57	60
EJ Index for RMP Proximity	54	59	62
EJ Index for Hazardous Waste Proximity	44	54	58
EJ Index for Wastewater Discharge Indicator	5	10	16

This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

Southern part of Yazoo Study Area



August 17, 2020

Southern Study Area

1:577,791

0 5 10 20 mi

0 5 10 20 km

Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State		EPA Region		USA	
		Avg.	%tile	Avg.	%tile	Avg.	%tile
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	8.19	8.56	13	8.59	37	8.3	44
Ozone (ppb)	37.7	38	41	40	36	43	20
NATA* Diesel PM (µg/m³)	0.155	0.263	22	0.417	<50th	0.479	<50th
NATA* Air Toxics Cancer Risk (risk per MM)	34	39	13	36	<50th	32	60-70th
NATA* Respiratory Hazard Index	0.47	0.56	11	0.52	<50th	0.44	60-70th
Traffic Proximity and Volume (daily traffic count/distance to road)	12	120	34	350	17	750	12
Lead Paint Indicator (% pre-1960s housing)	0.035	0.16	22	0.15	34	0.28	23
Superfund Proximity (site count/km distance)	0.013	0.064	18	0.083	15	0.13	8
RMP Proximity (facility count/km distance)	0.092	0.54	31	0.6	17	0.74	13
Hazardous Waste Proximity (facility count/km distance)	0.049	0.27	22	0.52	9	4	7
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0047	0.035	89	0.45	84	14	75
Demographic Indicators							
Demographic Index	43%	43%	55	38%	64	36%	66
Minority Population	39%	43%	51	38%	58	39%	58
Low Income Population	45%	44%	53	37%	65	33%	73
Linguistically Isolated Population	0%	1%	80	3%	51	4%	45
Population with Less Than High School Education	19%	17%	62	13%	73	13%	76
Population under Age 5	5%	6%	42	6%	47	6%	45
Population over Age 64	20%	15%	81	16%	76	15%	79

*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

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EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

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