

Annual Report – Calendar Year 2021  
Kentucky Wetland and Stream Fee-In-Lieu-Of Mitigation Program

In Accordance with  
“Modification of the Agreement Concerning In-Lieu-Mitigation Fees between the  
U.S. Army Corp of Engineers and  
the Kentucky Department of Fish and Wildlife Resources”

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## Introduction

This report provides information on the Kentucky Wetland and Stream Mitigation “Fee-In-Lieu-of” (FILO) Program sponsored by the Kentucky Department of Fish and Wildlife Resources (KDFWR) for the calendar year 2021 (CY21). This report refers to two periods of time called pre-transition and post-transition. October 2002 until January 2012 is considered pre-transition. During this time, the FILO program operated under the “Agreement Concerning In-Lieu Mitigation Fees between Kentucky Department of Fish and Wildlife Resources and the U.S. Army Corps of Engineers.” This Agreement established that the Wetland and Stream Mitigation Trust Fund within KDFWR may receive mitigation in lieu-fees from Department of Army permittees and in exchange, KDFWR would identify, assess, and implement stream and wetland restoration opportunities in Kentucky.

In January 2012, the Agreement was replaced to comply with the 2008 Mitigation Rule (USACE 2008) and the resulting document is referred to as the Instrument (USACE 2011). This “transition” from Agreement to Instrument separates pre-transition and post-transition. This is the tenth annual report since transitioning the program to comply with the 2008 Mitigation Rule. It is the fourth annual report under the most recent modification of the Instrument between the U.S. Army Corps of Engineers (USACE) and KDFWR (USACE 2018), which adds the Northern Kentucky Service Area. The report includes information required under the terms of the Instrument and additional information related to the program for activities in CY21. The report includes program activities in the Louisville, Nashville and Memphis USACE district offices.

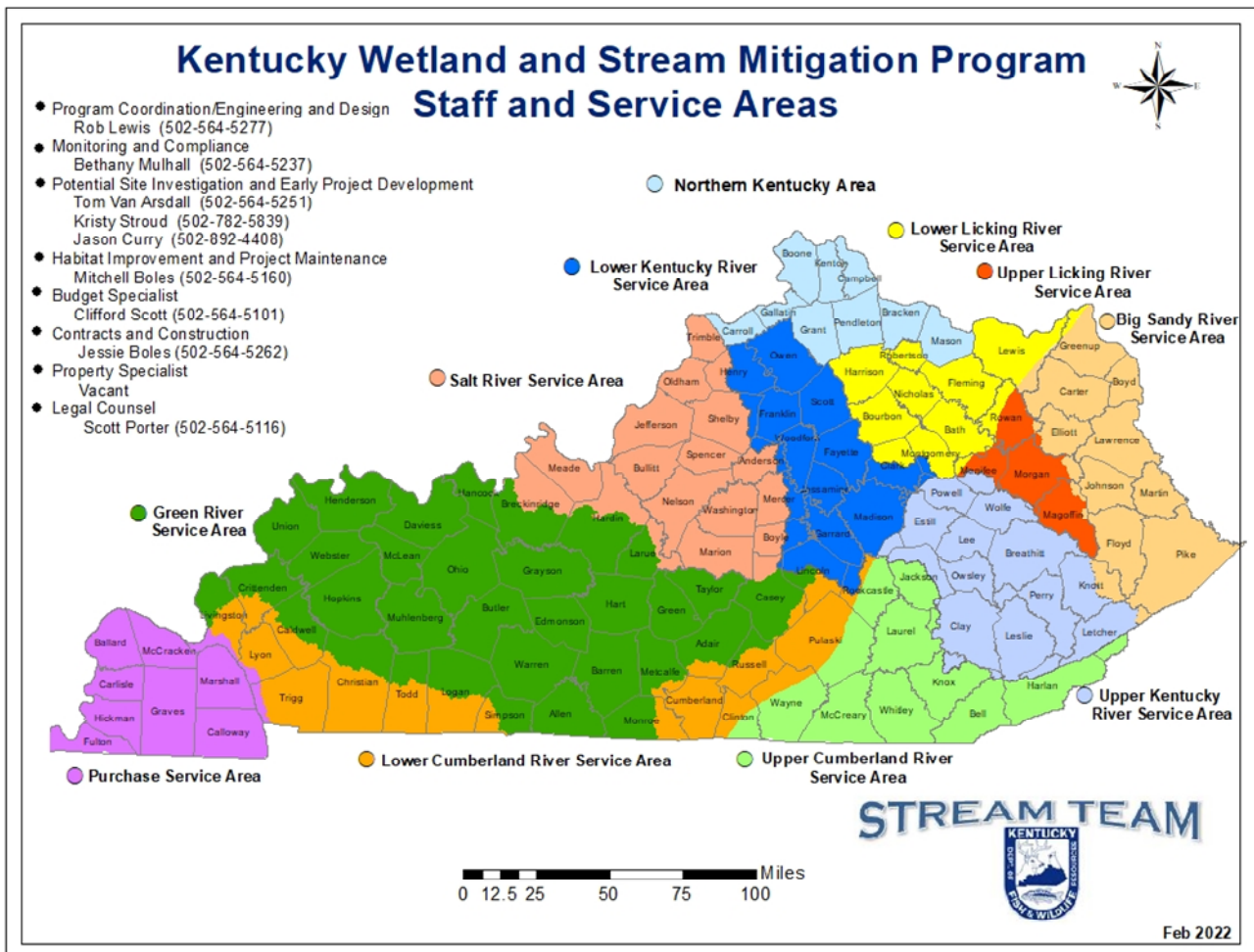
In July 2000, the Kentucky Legislature KRS 150.255, established The Kentucky Wetland and Stream Mitigation Fund. The KDFWR Wetland and Stream Mitigation Program manages this fund to provide a consistent and successful approach to fulfill compensatory mitigation requirements associated with the Clean Water Act Section 404 and Section 401, which are administered respectively by the USACE and the Kentucky Division of Water (KDOW). A Section 404 permit from the USACE and a Section 401 Water Quality Certification from KDOW are needed for activities that cause the permanent loss of streams or wetlands. These permits require compensatory mitigation for the losses. The intent of the mitigation is to offset the permanent loss of stream and wetland habitat within a defined watershed or regional area.

One option for 404 permit applicants to satisfy compensatory mitigation requirements is to purchase mitigation credits in-lieu of performing the mitigation themselves. This method of mitigation is termed “in-lieu fee mitigation”. The FILO program is a KDFWR sponsored in-lieu fee mitigation program that is supported by sales of mitigation credits to Section 404 permit applicants to satisfy regulatory requirements. The monies generated pay for stream and wetland projects that improve degraded habitat in streams and wetlands throughout the Commonwealth.

The USACE has Instruments with two separate in-lieu fee programs (or sponsors) in Kentucky: Northern Kentucky University (NKU) and KDFWR (**Figure 1**). The Instruments between the sponsors and the USACE ensure that the mitigation completed is sufficient to compensate for losses, provides permanent protection and long-term management, and adheres to applicable federal and state regulations and guidelines. By accepting in-lieu fee payments, the sponsor is assuming responsibility to provide compensatory mitigation pursuant to the terms of the Instrument established with the USACE. By purchasing credits from an in-lieu fee program,

developers seeking USACE permits are relieved of mitigation obligations. The Instrument defines the roles of an Interagency Review Team (IRT) composed of the USACE, KDOW, and U.S. Fish and Wildlife Service (USFWS), pursuant to federal rules. The U.S. Environmental Protection Agency (USEPA) is not a signatory agency to the Instrument but can provide comments on individual mitigation projects during the USACE permit process. The function of the IRT is to review and comment on proposed projects, monitoring reports, remedial management measure, credit releases and instrument modification. Although there are four USACE districts in Kentucky (Memphis, Nashville, Huntington and Louisville), the Louisville District is the Lead District for communication with the sponsor and coordinating with the IRT on issues related to the Instrument and it has assumed jurisdiction for Section 404 regulatory projects in the Huntington District’s region of Kentucky. The individual districts are responsible for specific issues with projects under their jurisdiction.

Figure 1: Kentucky Wetland and Stream Mitigation Program Staff and Service Areas



Mitigation projects are implemented on private or public lands and on lands owned or acquired by KDFWR; therefore, the success of the program is in part dependent on cooperation of landowners. Under additional restrictive selection criteria, the program also has the capability of preserving high quality aquatic resources through acquisition of properties with such resources

and permanently protecting those areas through legal instruments and management. The Instrument requires that all KDFWR in-lieu fee projects be permanently protected through conservation easements, the purchase of lands with deed restrictions, or long-term management plans on public properties such as U.S. Forest Service National Forest lands. For private lands, this involves identifying landowners willing to cooperate with the sponsor to donate or sell a conservation easement or to sell the property in fee-simple.

## Updated Agreement and Instrument Modifications

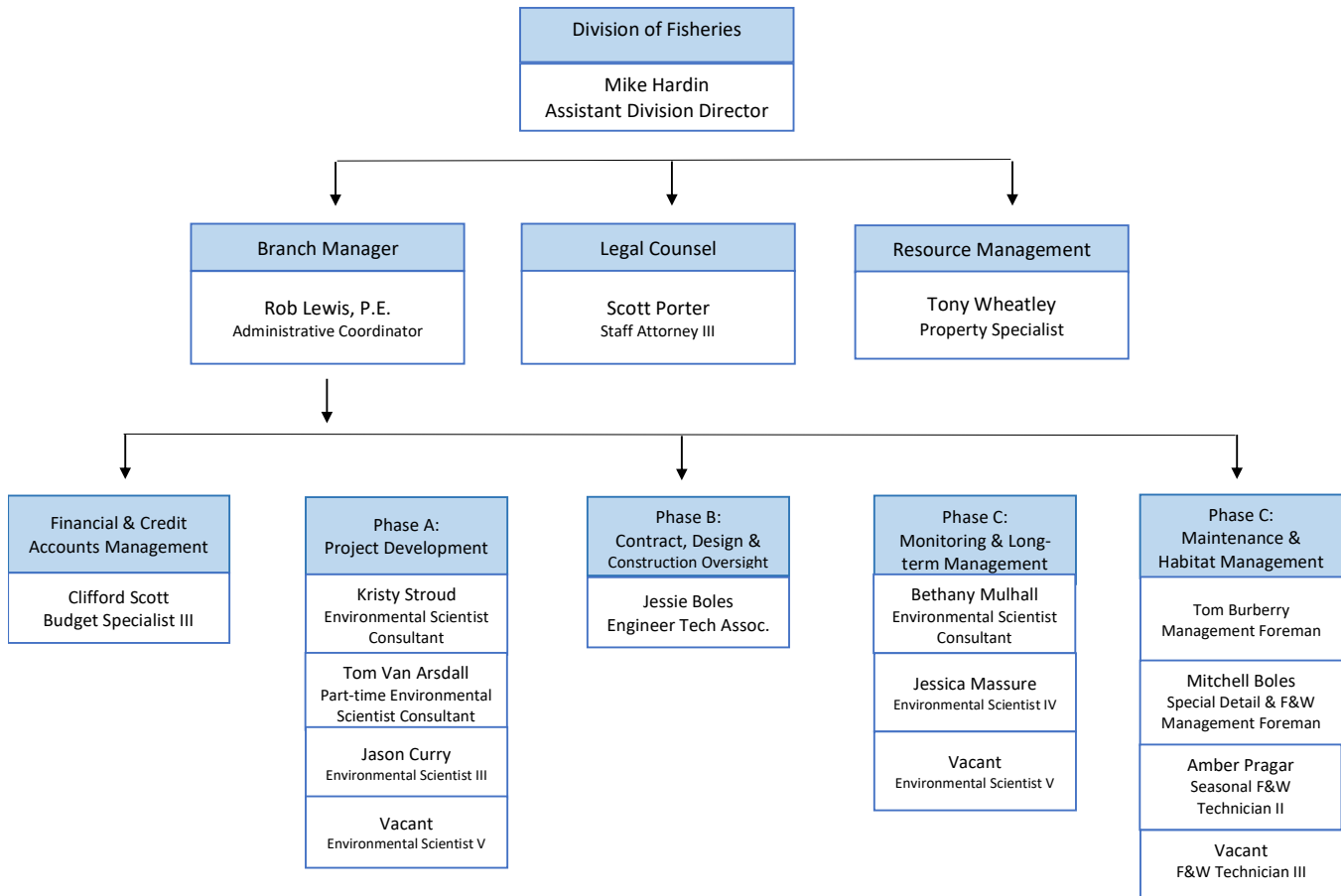
The Instrument went into effect on January 13, 2012 by Public Notice from the USACE. Its purpose was to comply with the 2008 Final Mitigation Rule (USACE 20080. The Instrument delineated service areas into ten units: Upper Kentucky River, Lower Kentucky River, Upper Cumberland River, Lower Cumberland River, Upper Licking River, Lower Licking River, Big Sandy River, Green River, Salt River and Jackson Purchase Service Areas. In early 2018, a Modification to the Instrument added a Northern Kentucky Service Area comprised of nine counties overlapping with NKU's Instrument. Mitigation credits can now be purchased from either NKU or KDFWR in these nine counties (**Figure 1, Figure 14**). Ecological Integrity Units (EIUs) are mitigation credit units calculated by the Eastern Kentucky Stream Assessment Protocol (EKSAP) used in the Big Sandy River, Upper Licking River, Upper Kentucky River and Upper Cumberland River service areas. Adjusted Mitigation Units (AMUs) are mitigation credit units calculated by the Kentucky Assessment Protocol (KAP) used in the remaining service areas of the Commonwealth. Adjusted Mitigation Units for wetlands (also called AMUs) are used statewide.

Eighteen projects have been permitted since early 2012 under the USACE Letter of Permission (LOP) process. USACE adds each project to the Instrument as modifications (**Appendix C**). The Ed Mabry – Laurel Gorge WMA restoration project was permitted in CY21.

## FILO Staff and Assignments

Most of FILO workload is allocated functionally into program operation and project stages: Financial and Credit Account Management; Phase A – Project Development; Phase B – Design and Construction; Phase C – Monitoring and Long-Term Management. However, FILO staff often combine into teams to assist in any phase as needed. At the end CY21 FILO saw the departure of Jessica Massure of Phase C and Tony Wheatley who assisted as a Property Specialist to FILO. Tom Burberry, Phase C's Management Foreman, departed FILO in the summer of 2021. Currently, the program is in the process of filling several vacancies that will support the productivity of each phase. The flowchart below depicts FILO's current organization:

**Figure 2: FILO Staff Organization Chart**



## Landowner Contacts and Potential Project Site Visits

Potential project site visits made by FILO staff in CY21 are shown in **Table 1**; the table does not reflect the landowner and realtor contacts that did not result in site visits. Consultants were used to locate potential projects in the Big Sandy, Upper Licking, Upper Kentucky, Upper Cumberland, Lower Cumberland and Northern Kentucky service areas. The table only shows sites visited by FILO staff and does not depict the additional site identification effort of consultants.

**Table 1. Initial Site Visits in CY21**

Service Area	Site Name	County	Public or Private	Project Type	Land Protection
Big Sandy	Kinniconick	Lewis	Private	Stream	Purchase
Upper Kentucky	Little Beech Creek	Clay	Private	Stream	Purchase
Jackson Purchase	Clarks River	Marshall	Private	Stream/Wetland	Purchase
Lower Kentucky	Franklin Co. Farm	Franklin	Private	Stream	Easement
Upper Cumberland	Laurel Co. Wetland	Laurel	Private	Wetland	Purchase
Lower Cumberland	Ferguson Creek	Livingston Co.	Private	Wetland	Purchase
Upper Kentucky	Little Buck Creek	Estill	Private	Stream/Wetland	Purchase
Big Sandy	Griffin Creek	Carter	Private	Stream	Easement
Upper Cumberland	Blevins Property	McCreary	Private	Wetland	Easement

## Credit Costs and Status

The Instrument established 240,000 advance stream credits in each service area, except the Northern Kentucky Service Area, which established 100,000 advance stream credits. In addition, 100 AMU advance wetland credits were established in each service area except in the Green and Jackson Purchase Service Areas where 200 wetland AMU advance credits were provided.

The cost per credit for stream and wetlands in all service areas remained the same in CY21 (**Table 2**).

**Table 2. Credit Costs (\$)**

*Credit Costs (\$)*

<u>Service Area</u>	<u>Stream</u>		<u>Wetland</u>	
	<u>Cost/Credit</u>		<u>Cost/AMU</u>	
	Beginning CY2021	Ending CY2021	Beginning CY2021	Ending CY2021
Big Sandy (EIU)	820 <sup>a</sup>	820 <sup>a</sup>	61,500 <sup>a</sup>	61,500 <sup>a</sup>
Upper Licking (EIU)	750	750	61,500	61,500
Upper Kentucky (EIU)	870	870	61,500	61,500
Upper Cumberland (EIU)	880	880	61,500	61,500
Lower Licking (AMU)	350	350	61,500	61,500
Lower Kentucky (AMU)	330	330	61,500	61,500
Lower Cumberland (AMU)	415	415	61,500	61,500
Green (AMU)	400	400	61,500	61,500
Salt (AMU)	415	415	61,500	61,500
Jackson Purchase (AMU)	405	405	61,500	61,500
Northern Kentucky (AMU)	465	465	61,500	61,500

<sup>a</sup>Big Sandy credit sales suspended November 17, 2014

In November 2014, credit sales were suspended in the Big Sandy Service Area because of: 1) the difficulty in finding mitigation projects meeting criteria (i.e., sites without mineral rights, property title or owner issues, or water quality issues); 2) the 3-year timeframe for initiating mitigation projects from the time fees were received was not going to be met due to the paucity of mitigation sites without mineral issues; and 3) several large tracts of land involving thousands of potential mitigation credits that would have covered the obligation could not be developed further because of oil and gas interests. Considering these three factors, it was determined the pace of finding successful projects in the Big Sandy Service Area would not likely keep up with the pace of sales. Credit sales had not been resumed by the end of CY21.

In CY21, FILO sold 3,396 stream EIUs, 21,662 stream AMUs, and 50 wetland AMUs (**Table 3 and 3.1**). Table 3 and 3.1 show advance credit balances for streams and Table 4 and 4.1 show advance credit balances for wetlands in each service area. **Appendix A** presents individual credit sales, costs and balances for each service area.



**Table 3. and 3.1. Advance Stream Credit Balances**

*Advance Credit Balances*

<u>Stream EIU Regions</u>	<u>Big Sandy</u>	<u>Upper Kentucky</u>	<u>Upper Licking</u>	<u>Upper Cumberland</u>				<u>Stream EIU Totals</u>
Advance Credit Allocation	240,000	240,000	240,000	240,000				
CY2021 Beginning Credit Balance	203,781.66	208,664.37	226,107.40	229,506.29				
CY2021 Credits Sold	-	3,337.00	-	59.40				3,396.40
CY2021 Released Credits	593.00	-	-	-				593.00
CY2021 Ending Advance Stream EIU Balance	204,374.66	205,327.37	226,107.40	229,446.89				

<u>Stream AMU Regions</u>	<u>Lower Kentucky</u>	<u>Lower Licking</u>	<u>Lower Cumberland</u>	<u>Green</u>	<u>Salt</u>	<u>Jackson Purchase</u>	<u>Northern Kentucky</u>	<u>Stream AMU Totals</u>
Advance Credit Allocation	240,000	240,000	240,000	240,000	240,000	240,000	100,000	
CY2021 Beginning Credit Balance	218,266.80	209,252.93	179,338.59	186,227.94	110,432.96	237,085.51	-	
CY2021 Credits Sold	-	3,284.00	4,576.00	7,877.00	-	5,925.00	-	21,662.00
CY2021 Released Credits	-	-	-	-	-	-	-	-
CY2021 Ending Advance Stream AMU Balance	218,266.80	205,968.93	174,762.59	178,350.94	110,432.96	231,160.51	-	

**Table 4. and 4.1. Advance Wetland Credit Balances**

<u>WETLAND AMUs</u>	<u>Big Sandy</u>	<u>Upper Kentucky</u>	<u>Lower Kentucky</u>	<u>Upper Licking</u>	<u>Lower Licking</u>	<u>Jackson Purchase</u>
Advance Credit Allocation	100.000	100.000	100.000	100.000	100.000	200.000
CY2021 Beginning Credit Balance	93.439	78.850	85.268	85.780	97.420	193.280
CY2021 Credits Sold	-	4.910	-	-	2.400	4.700
CY2021 Released Credits	-	-	-	-	-	-
CY2021 Ending Advance Wetland AMU Balance	93.439	73.940	85.268	85.780	95.020	188.580

<u>WETLAND AMUs (con't)</u>	<u>Upper Cumberland</u>	<u>Lower Cumberland</u>	<u>Green</u>	<u>Salt</u>	<u>Northern Kentucky</u>	<u>Wetland AMU Totals</u>
Advance Credit Allocation	100.000	100.000	200.000	100.000	100.000	
CY2021 Beginning Credit Balance	80.159	75.557	139.012	53.537	67.000	
CY2021 Credits Sold	-	-	1.500	35.100	2.100	50.710
CY2021 Released Credits	-	0.435	-	-	-	0.435
CY2021 Ending Advance Wetland AMU Balance	80.159	75.992	137.512	18.437	64.900	

## Program Financial Status

In-lieu fees paid into the program are divided into three categories: Administrative, Reserve and Project. Project funds are available for existing and new projects in corresponding service areas. During CY21, credit sales took in \$14.6M total receipts, representing \$11.7M in project funds (**Table 5**). The Upper Kentucky Service Area and the Green River Service contributed the highest percentage of receipts (at 22 % each) totaling just over \$6.4M. The Jackson Purchase Service Area and the Salt Service Area contributed the second highest percentage of receipts (18% and 15% respectively). The largest category of receipts came from the KY Transportation Cabinet at 75% (**Table 6**). In-lieu-fee payments to FILO from mitigation impacts caused by 404-permitted activities including impact types and the amounts is included in (**Table 7**). Full or partial disclosure of records concerning administrative, reserve or project funds can be requested through the Freedom of Information Act (FOIA).

**Table 5. CY21 Service Area Receipts and Project Funds (\$)**

*CY2021 Service Area Receipts and Project Funds (\$)*

<u>Service Area</u>	<u>CY2021 Total Receipts</u>	<u>CY2021 portion to Reserve Funds</u>	<u>CY2021 portion to Admin Funds</u>	<u>CY2021 portion to Project Funds</u>	<u>CY2021 Beginning Project Fund Balance S&amp;W</u>	<u>CY2021 Ending Project Fund Balance S&amp;W</u>	<u>CY2021 Service Area % of Receipts</u>
Big Sandy	-	-	-	-	18,749,173	18,749,173	0%
Upper Kentucky	3,205,155	320,516	320,516	2,564,124	19,060,864	21,624,988	22%
Lower Kentucky	-	-	-	-	6,239,045	6,239,045	0%
Upper Cumberland	52,272	5,227	5,227	41,818	7,864,658	7,906,476	0%
Lower Cumberland	1,899,040	189,904	189,904	1,519,232	13,281,314	14,800,546	13%
Upper Licking	-	-	-	-	7,900,226	7,900,226	0%
Lower Licking	1,297,000	129,700	129,700	1,037,600	8,298,973	9,336,573	9%
Salt	2,158,650	215,865	215,865	1,726,920	31,215,205	32,942,125	15%
Green	3,243,050	324,305	324,305	2,594,440	12,483,251	15,077,691	22%
Jackson Purchase	2,688,675	268,868	268,868	2,150,940	936,131	3,087,071	18%
Northern Kentucky	129,150	12,915	19,372	96,863	30,217,210	30,314,072	1%
<b>TOTALS</b>	<b>14,672,992</b>	<b>1,467,299</b>	<b>1,473,756</b>	<b>11,731,936</b>	<b>156,246,049</b>	<b>167,977,985</b>	<b>100%</b>

**Table 6. FILO Receipts by Source - CY21**

*CY2021 Receipts by Source*

<u>Source</u>	<u>Receipts (\$)</u>	<u>% of total</u>
KY Transportation Cabinet	11,023,620	75%
Development	3,501,772	24%
Utilities	147,600	1%
<b>Total</b>	<b>14,672,992</b>	<b>100%</b>

Table 7. FILO Receipts for Purchased Credits including Impact Types

Receipts - type of payment	Amount	Service Area	County	Stream / Wetland	Credits	Perennial Credits	Intermittent Credits	Ephemeral Credits	Wetland Credits
transportation	\$1,899,040.00	LC	Pulaski	S	4576	3626	950		
development	\$ 36,900.00	NKY	Boone	W	0.6				0.6
utilities	\$ 79,950.00	Salt	Jefferson	W	1.3				1.3
transportation	\$2,399,625.00	JP	Calloway	S	5925	2083	3842		
transportation	\$ 289,050.00	JP	Calloway	W	4.7				4.7
transportation	\$ 12,300.00	NKY	Boone	W	0.2				0.2
transportation	\$ 271,215.00	UK	Clay	W	4.41				4.41
transportation	\$ 339,300.00	UK	Clay	S	390		390		
transportation	\$2,563,890.00	UK	Lee/Owsley	S	2947	801	2146		
transportation	\$ 30,750.00	UK	Lee/Owsley	W	0.5				0.5
transportation	\$2,322,000.00	GR	Taylor	S	5805	2043	3426	336	
transportation	\$ 67,650.00	GR	Taylor	W	1.1				1.1
development	\$ 52,272.00	UC	Harlan	S	59.4	59.4			
development	\$ 24,600.00	GR	Taylor	W	0.4				0.4
development	\$ 67,650.00	LL	Boyd	W	1.1				1.1
development	\$ 36,900.00	NKY	Kenton	W	0.6				0.6
development	\$ 399,750.00	Salt	Bullitt	W	6.5				6.5
development	\$ 55,350.00	LL	Lewis	W	0.9				0.9
development	\$1,666,650.00	Salt	Jefferson	W	27.1				27.1
development	\$ 24,600.00	NKY	Boone	W	0.4				0.4
development	\$ 18,450.00	NKY	Kenton	W	0.3				0.3
development	\$ 253,750.00	LL	Kenton	S	725		725		
transportation	\$ 828,800.00	GR	Barren	S	2072		2072		
utilities	\$ 12,300.00	Salt	Bullitt	W	0.2				0.2
development	\$ 296,450.00	LL	Kenton	S	847		847		
development	\$ 12,300.00	LL	Kenton	W	0.2				0.2
development	\$ 599,200.00	LL	Boone	S	1712		1712		
development	\$ 12,300.00	LL	Boone	W	0.2				0.2

### Project Fund Status

Table 8 shows: 1) project funds received for streams and wetlands in each of the eleven service areas post-transition through CY21; 2) funds currently allocated to “approved” projects; and 3) funds unallocated at the end of the year. For purposes of understanding the balance of in-lieu fee funds and project activity it is important to define terms and accounting protocols internal to the state. Capital accounts are established for each in-lieu fee mitigation project. Property, design, construction, planting and monitoring costs are paid out of the capital accounts specific to each mitigation project. The current protocol for funding in-lieu fee mitigation projects does not allow all mitigation project funds to be moved into the respective capital account at the start of a project. Instead, mitigation project funds are moved into capital accounts in stages: first, property funds are moved, then design, and lastly construction funds. Because of this practice, program staff must track the amount of funds necessary to complete all phases of mitigation projects as “allocated” funds. Allocated funds are defined as the amount of funds which are tracked as necessary to complete all phases of a mitigation project. Funds are allocated to mitigation projects soon after the USACE provides the initial support letter for a mitigation project under the Letter of Permission (LOP) permitting process. Allocated funds must be tracked by program staff and are not tracked in the state’s electronic accounting system, eMars. Because of this

practice, the program cash balance includes funds that are allocated to mitigation projects, and because these allocated funds will be necessary to complete construction, they will have to be moved out of the fund account and into the respective capital accounts last. Also, because construction funds are the largest amount in any mitigation project the cash balance has a large percentage that is allocated to mitigation projects and therefore is not truly reflective of project related activity. Unallocated funds are defined as funds that are not yet set aside for the completion of mitigation projects. Approximately \$147.6M is allocated to stream projects and roughly \$24.5M of stream project money is un-allocated, mostly in the Northern Kentucky, Big Sandy and Upper Kentucky River Service Areas. Approximately \$14.9M is over-allocated in the Lower Licking, Lower Kentucky, Upper Cumberland, Lower Cumberland, Upper Licking and Salt Service Areas. The Reserve Fund can be used to cover over-allocation.

Over \$8M in project funds has been collected for wetland mitigation since the transition (**Table 8**), with about \$2.8M allocated, mostly in the Salt River Service Area. Approximately \$4.5M of wetland funds is unallocated, mostly in the North Kentucky Service Area.

**Table 8. Allocated and Unallocated Project Funds for Stream and Wetland by Service Area (\$)**

*Allocated and Unallocated Project Funds for Stream and Wetland, by Service Area (\$)*

<b>Basin</b>	<b>Stream</b>			<b>Wetland</b>		
	<b>Project</b>	<b>Allocated</b>	<b>Unallocated</b>	<b>Project</b>	<b>Allocated</b>	<b>Unallocated</b>
Big Sandy	18,597,032	13,582,631	5,014,401	152,141	3,600	148,541
Upper Kentucky	20,629,474	7,801,480	12,827,994	995,513	193,136	802,377
Lower Kentucky	5,768,097	6,814,137	(1,046,041)	470,948	133,620	337,328
Upper Cumberland	7,314,583	9,494,561	(2,179,978)	591,893	0	591,893
Lower Cumberland	14,139,604	14,941,914	(802,310)	660,943	0	660,943
Upper Licking	7,411,343	10,517,501	(3,106,159)	488,884	2,158,928	(1,670,045)
Lower Licking	9,133,074	15,306,804	(6,173,731)	203,499	0	203,499
Green	13,059,142	12,968,433	90,710	2,018,549	2,398,977	(380,428)
Salt	29,594,282	31,285,463	(1,691,181)	3,347,842	2,815,194	532,648
Jackson Purchase	2,603,282	114,310	2,488,972	483,789	272,166	211,623
Northern Kentucky	28,974,985	24,839,459	4,135,526	1,339,088	305,427	1,033,660
<b>Total</b>	<b>157,224,897</b>	<b>147,666,693</b>	<b>24,557,602<sup>a</sup></b> <b>(14,999,398)<sup>b</sup></b>	<b>10,753,089</b>	<b>8,281,049</b>	<b>4,522,512<sup>a</sup></b> <b>(2,050,473)<sup>b</sup></b>

<sup>a</sup>Total of Unallocated funds

<sup>b</sup>Total of over-allocated funds (currently covered by Reserve funds)

## Reserve Fund

Pursuant to the Instrument, the Reserve Fund was established as additional financial assurances to fund contingency actions and long-term management. The Reserve Fund functions as an endowment and insurance to cover shortfalls in meeting credit obligations, contingency needs and maintenance costs. It pays for additional mitigation projects, permanent protection activities, minor repair actions and other activities not funded through service area or administrative accounts. Contributions to the Reserve Fund come from a percentage of credit sales, currently set at 10% of credit sales and a percentage of accumulated interest currently set at 90% of accumulated interest. A non-wasting amount of \$3M was designated for the Reserve Fund. The balance of funds above the non-wasting limit is referred to as the “Active Reserve”. These funds can be spent for remedial actions or additional projects that generate a surplus of credits subject to approval by the Corps of Engineers.

The contribution to the Reserve Fund during CY21 from credit sales was \$1.4M. The total Reserve Fund at the end of CY21 was \$13.5M, which results in an active Reserve Fund of \$10.5M when accounting for the \$3M non-wasting Reserve Fund required by the Instrument. **Table 9** gives a full accounting of the Reserve Fund, including those funds currently projected as needed in nine service areas with an over-allocation of project funds. The over-allocation of project funds potentially generates mitigation credits with completed projects ‘on the ground’ in advance of impacts helping to address the 3-year timeframe requirement or to generate additional mitigation credits that provide insurance against shortfalls that could be incurred with other mitigation projects in the same service area. Additional receipts in the respective service areas received prior to initiation of a mitigation project will be used instead of the Reserve Fund, as use of the Reserve Fund would then be unnecessary. These additional receipts will reduce, if not remove, the need to ‘cover’ these over-allocated service areas with the Reserve Fund. In some cases, project receipts could also be used to refund the Reserve Fund, depending on the timing and scale of receipts and the needs in a service area.

Each year, the program seeds a long-term management and maintenance account with funds from the Reserve Fund to pay for management and minor remedial actions (**Table 8**). This allows the program to be responsive to the USACE and IRT directives in taking necessary remedial or maintenance actions in addition to undertaking planned long-term management tasks.

**Table 9. CY21 Reserve Fund Activity and Balance (\$)**

*CY2021 Reserve Balance and Activity (\$)*

<b>Beginning CY2021 Reserve Cash Balance</b>	<b>35,993,455</b>	
% of CY2021 stream receipts	1,155,433	Sales and closed/transitioned funds
% of CY2021 wetland receipts	311,867	Sales and closed/transitioned funds
CY2021 Interest Distribution	(761,675)	Interest distribution - 90%
E Fork Indian Repair C9Y5	(574,200)	AMP Repairs
Salt Lick Repair C9Y6	(70,000)	AMP Repairs
Long Term Maintenance C8R5	(625,000)	Additional Funding
<b>Ending CY2021 Reserve Cash Balance</b>	<b>35,429,879</b>	
CY2021 project fund reserve coverage	(1,046,041)	Lower Kentucky Stream allocation
CY2021 project fund reserve coverage	(2,179,978)	Upper Cumberland Stream allocation
CY2021 project fund reserve coverage	(802,310)	Lower Cumberland Stream allocation
CY2021 project fund reserve coverage	(1,691,181)	Salt River Stream allocation
CY2021 project fund reserve coverage	(3,106,159)	Upper Licking Stream allocation
CY2021 project fund reserve coverage	(6,173,731)	Lower Licking Stream allocation
CY2021 project fund reserve coverage	(380,428)	Green River Wetland allocation
CY2021 project fund reserve coverage	(1,670,045)	Upper Licking Wetland allocation
Meadowland Full Delivery	(962,500)	Northern KY FD Contractual Reserve obligation
Big Lick Full Delivery	(840,000)	Salt River FD Contractual Reserve obligation
<b>Ending CY2021 Reserve obligations</b>	<b>(18,852,371)</b>	*Subject to USACE Approval
Reserve Balance after obligations	16,577,508	
Non-Wasting Reserve	3,000,000	
<b>Ending CY2021 Active Reserve Balance</b>	<b>13,577,508</b>	

**Administrative Fund**

The Administrative Fund is used for expenses associated with activities to operate the program and to identify new projects. Such activities include feasibility studies, consultant contracts for early phase project development outreach and property development staff salaries, equipment and additional indirect expenses such as travel and training. The Administrative Fund balance entering CY21 was \$14,290,545. During CY21, \$1,473,757 was added to the Administrative Fund from 10% of credit sales. **Table 10** details the use of the Administrative Fund during CY21, leaving a year-end balance of \$10,696,527. The CY21 total annual Operating Expenditures equaled \$1,479,394..

**Table 10. CY21 Administrative Fund Activity and Balance (\$)**

<i>CY2021 Administrative Fund Activity and Balance (\$)</i>		
<b>Beginning CY2021 Administrative Cash Balance</b>	<b>14,290,545</b>	
% of CY2021 stream receipts	1,155,433	Credit sales and closed/transitioned funds
% of CY2021 wetland receipts	318,324	Credit sales and closed/transitioned funds
CY2021 Interest Distribution	(84,631)	Interest distribution - 10%
CY2021 operating expenditures	(1,479,394)	Payroll and operations cost
CY2021 Capital Fund Activity	(1,220,000)	Administrative Funded Capital Accounts
<b>Ending CY2021 Administrative Cash Balance</b>	<b>12,980,277</b>	
Meadowland Full Delivery (Northern Kentucky)	1,443,750	Northern KY FD Contractual Administrative obligation
Big Lick Full Delivery (Salt River)	840,000	Salt River FD Contractual Administrative obligation
<b>Total FD Administrative Fund Obligation</b>	<b>2,283,750</b>	
<b>Ending CY2021 Active Administrative Balance</b>	<b>10,696,527</b>	

## Mitigation of Impacts

Prior to the 2008 Mitigation Rule fully taking effect with the Instrument in early 2012, it was not possible to relate mitigation impacts caused by 404-permitted activities because in-lieu fee payments to FILO had little documentation regarding the quantity, quality and flow regime of stream impacts. This was especially true during the first few years of the in-lieu fee program. It was assumed that impacts and mitigation occurred on similar stream flow types, resulting in similar linear feet affected. Thus, the pre-transition programmatic success was based on cost per linear foot that was established by the USACE as a “base-rate” that was then used in a formula by the USACE during the permitting process to determine a final in-lieu fee payment amount. The program did not have access to permit applicant information regarding impact types and amounts. The available data could track only the amount of in-lieu fees received and the timing of the allocation of those funds to mitigation projects. With the implementation of the Instrument and the conversion of unallocated funds to credits, it is possible to compare impacts (Advance Credits sold by FILO) to mitigation (Advance Credits fulfilled by FILO) for projects that began (approved by the IRT) post-transition. Many of the projects reported here were permitted prior to the transition.

## Actions Taken by Interagency Review Team

Six conceptual plans were submitted and six virtual IRT site visit presentations were conducted in CY21 (**Table 11**). The IRT had the option of choosing to see the sites in person per Covid-19 guidance and two of those sites were seen in person in CY21. All six of the projects were conceptually approved at the end of CY21.



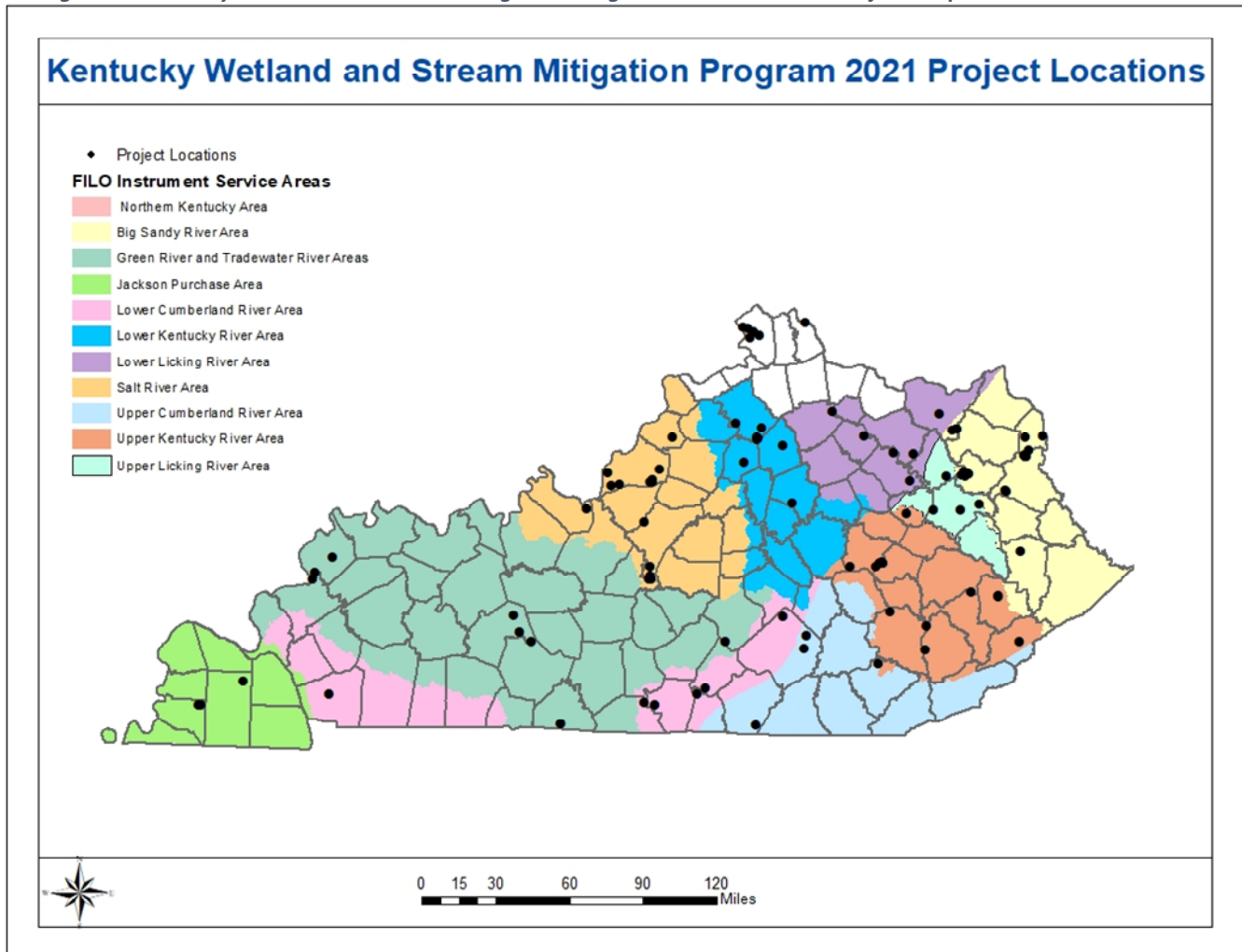
**Table 11. CY21 Conceptual Plans Submitted, Actions of Interagency Review Team, Subsequent Activity**

Project	Service Area	USACE District	County	Type	CP Submitted	Virtual Presentation	IRT Site Visit	Status
Trib Twelvemile Cr	NKY	Louisville	Campbell	Stream	3/19/2021	4/19/2021	no	Approved 11/23/21
Tribs Gunpowder Cr /Riddles Run	NKY	Louisville	Boone	Stream	3/12/2021	4/19/2021	5/24/2021	Approved 12/9/21
Second Cr	NKY	Louisville	Boone	Stream	7/2/2021	9/7/2021	9/14/2021	Approved 12/20/21
St Anne wetland	NKY	Louisville	Campbell	Wetland	11/8/2020	12/3/2020	no	Approved 6/28/21
Gunpowder I	NKY	Louisville	Boone	Stream	11/6/2020	12/3/2020	no	Approved 6/4/21
Duke Power	NKY	Louisville	Boone	Wetland				in development

### Project Statistics and Status

The IRT has approved 154 projects over the FILO program’s 19-year history (2002-2021). Ninety-nine projects have been completed or are in various stages of development (**Figure 3; Tables 12-22**). The IRT has approved 56 projects since the FILO program’s inception that were not continued because property issues such mineral rights or title concerns, cost, because landowner concerns, or other issues. Expenses associated with projects that begin development but not completely pursued are absorbed by administrative or reserve funds, as appropriate. Terminated or shelved projects do not result in less mitigation obligation, and have not reduced available project funding. (**Appendix B**).

**Figure 3. Kentucky Wetland and Stream Mitigation Program CY21 Statewide Project Map**



## Big Sandy River Service Area – Active Project Status

There are ten active projects in this service area and ten in the Long-Term Management phase. These projects fall within the USACE Louisville District and EKSAP region, which utilizes the EIU credit system (**Figure 4, Table 11**).

Bolts Fork, Boyd County: FILO submitted the Year 5 monitoring report in December 2018. Invasive species management occurred throughout the monitoring period and targeted multiflora rose, Johnson grass, autumn olive, and black alder. A bank repair was attempted in August 2018 at the upstream end of the project on the right descending bank. A “lighter-touch” approach was used with the intent to maximize the vegetative component in that area. Unfortunately, this effort was unsuccessful, and a large rain event damaged the area before vegetation could establish. Efforts to repair the area again with more aggressive techniques were completed in 2021 via a Design/Build Contract. Bank stabilization techniques including rock toe repair were implemented with temporary seeding and straw following. KDFWR staff will install permanent vegetation (live stakes, bare root trees, container trees, and native seed) in early 2022. The KDFWR will seek monitoring release once planting, and sufficient monitoring are complete.

Laurel Creek Gorge #2 (Green-Johnson tracts), Elliot County: The properties are part of the Ed Mabry-Laurel Gorge WMA. They have been combined with other properties (Smith Property and Mart Whitt Fork) purchased around the WMA into one design-build project. In 2021, FILO started construction.

Mart Whitt Fork, Elliot County: The property is part of the Ed Mabry-Laurel Gorge WMA. It has been combined with other properties (Smith Property and Laurel Creek Gorge #2) purchased around the WMA into one design-build project. In 2021, FILO started construction.

Mart Whitt Fork II, Elliot County: Approved by the IRT in 2020, this property adjoins the Mart Whitt Fork project which is part of the Laurel Creek Gorge WMA. Currently, there are landowner issues to resolve.

Old Trace Creek, Lewis County: Approved in 2013, KDFWR purchased the property in March 2014. The design-build contract started in 2015 and construction began in 2017. Construction and planting were completed in early 2018, commencing the first year of monitoring. FILO submitted the Year 4 monitoring report in December 2021. Credit release calculations using the approved calculate and release request letter will follow in early 2022. A compliance visit will occur in 2022 if desired by IRT members. The tributaries to Old Trace Creek were repaired with rock toe and live stakes by KDFWR staff in early 2020. A few areas of erosion were noted in the 2021 report and will be revisited and repaired if necessary, in 2022. Old Trace Creek was repaired by the original contractor in early 2020 under project construction warranty.

Smith Property, Elliot County: The property is part of the Ed Mabry-Laurel Gorge WMA. It has been combined with other properties (Mart Whitt Fork and Laurel Creek Gorge #2) purchased around the WMA into one design-build project. In 2021, FILO started construction.

Staggs Branch, Lewis County: In 2020, FILO purchased the 440-acre property. In 2021, FILO submitted a Phase 1 Archaeology Report and Cultural Resources Report for Section 106 of the National Historic Preservation Act, worked on a Biological Assessment for Section 7 of the Endangered Species Act, and conducted the Preliminary Design/JD and Assessment Verification Meetings.

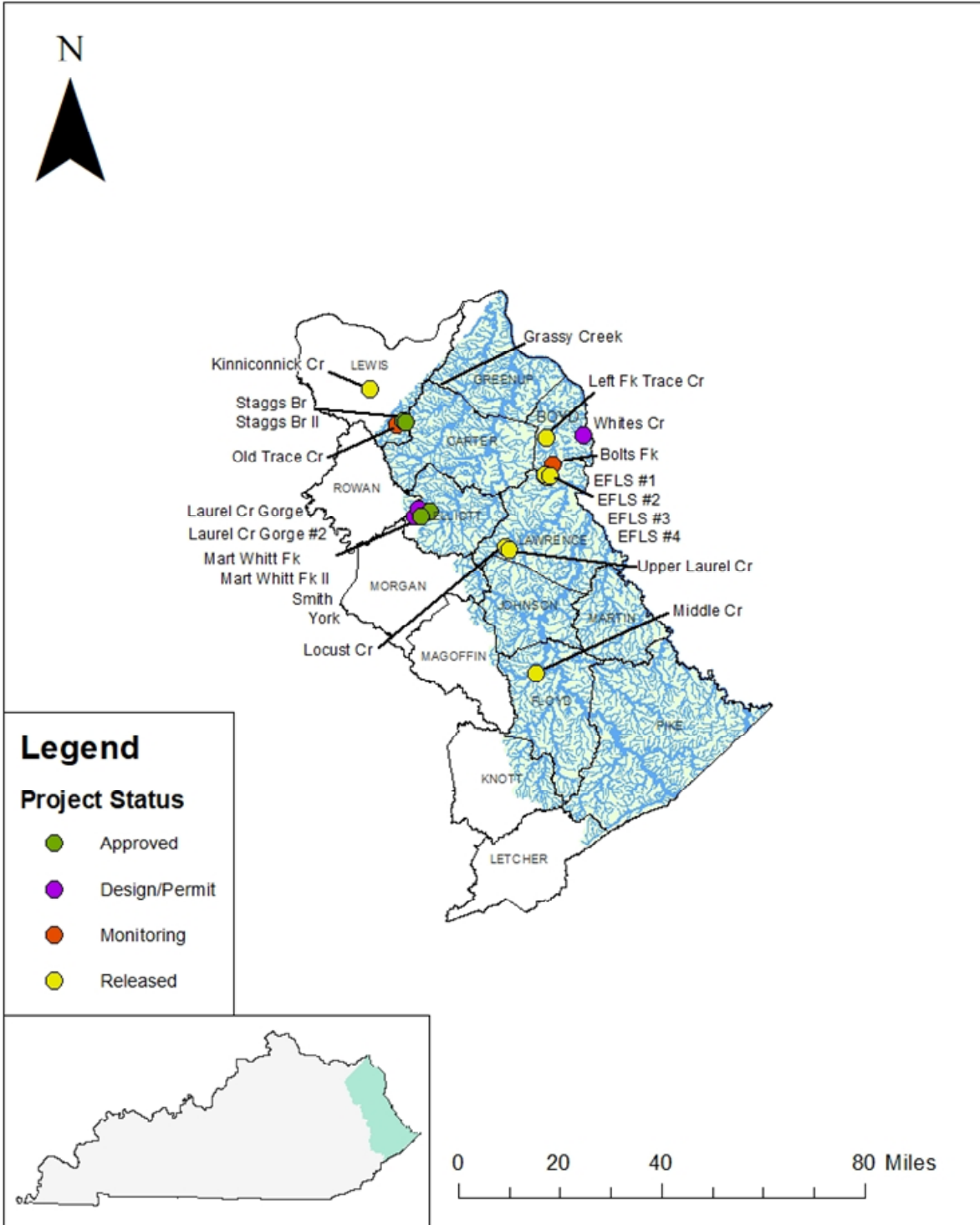
Staggs Branch II, Lewis County: Approved in 2019, the property is roughly 450 acres and adjoins the upstream portion of Staggs Branch encompassing over 95% of the upstream watershed. The property consists of two separate landowners and to date only one has accepted the offer at appraised price securing 100 acres including a significant portion of the watershed that will help preserve a forested portion of the watershed above the original Staggs Branch project. The remaining property may be pursued as a potential mitigation site in the future.

Whites Creek, Boyd County: In 2016, the Floodplain permit was received and in 2017, the Mitigation Plan was completed. In 2018, FILO received the 401 WQC. In 2019 and 2020, FILO worked towards finalizing the easement. In 2021, FILO finalized the easement and received a 404 permit.

York Property, Elliot County: FILO acquired the property in 2021. The 55 additional acres adjoins the southeast portion of Ed Mabry-Laurel Gorge WMA and will help provide a new, safe and public access point to the WMA.

Figure 4. Project Status in the Big Sandy Service Area

## Big Sandy River Service Area Projects 2021



**Table 12. Project Status in the Big Sandy River Service Area**

Count	Project	Status	County	USACE District	404 Permit #
1	Staggs Br	CP Approved	Lewis	Louisville	LRL-2016-153-pgj
2	Staggs Br II	CP Approved	Lewis	Louisville	LRL-2019-00436
3	York	CP Approved	Elliott	Louisville	LRL-2013-1012-pgj
4	Mart Whitt II	CP Approved	Elliott	Louisville	LRL-2020-00578-pgj
5	Laurel Cr Gorge #2	Construction	Elliott	Louisville	LRL-2012-478-pgj
6	Mart Whitt Fk	Construction	Elliott	Louisville	LRL-2013-598-pgj
7	Smith	Construction	Elliott	Louisville	LRL-2013-1013-pgj
8	Whites Cr	Design/Permit	Boyd	Louisville	LRL-2012-634-pgj
9	Bolts Fk	Release Pending	Boyd	Louisville	LRL-2010-698-pgj
10	Old Trace Cr	Monitoring - YR 4	Lewis	Louisville	LRL-2013-336-pgj
11	EFLS #1	Released - Long Term Management	Lawrence	Louisville	200401120
12	EFLS #2	Released - Long Term Management	Lawrence	Louisville	LRL-2009-332-pgj
13	EFLS #3	Released - Long Term Management	Lawrence	Louisville	LRL-2008-1082-pgj
14	EFLS #4	Released - Long Term Management	Lawrence	Louisville	LRL-2009-123-pgj
15	Kinniconnick Cr	Released - Long Term Management	Lewis	Louisville	LRL-2007-409-pgj
16	Laurel Cr Gorge	Released - Long Term Management	Elliott	Louisville	-
17	Left Fk Trace Cr	Released - Long Term Management	Boyd	Louisville	2006-00160
18	Locust Cr	Released - Long Term Management	Lawrence	Louisville	LRL-2008-1249-pgj
19	Middle Cr	Released - Long Term Management	Floyd	Louisville	LRL-2006-1256-pgj
20	Upper Laurel Cr	Released - Long Term Management	Lawrence	Louisville	200500901
1	Brushy Cr	Approved - Terminated	Greenup	Louisville	200400931
2	EFLS #5	Approved - Terminated	Lawrence	Louisville	LRL-2011-456-pgj
3	Ison Creek	Approved - Terminated	Elliott	Louisville	LRL-2013-222-pgj
4	Laurel Cr Tributary	Approved - Terminated	Elliott	Louisville	-
5	Laurel Tribs - Rowe Flats	Approved - Terminated	Elliott	Louisville	LRL-2013-770-pgj
6	Schultz Creek	Approved - Terminated	Greenup	Louisville	2009-806
7	Lovelace Fork	Approved - Terminated	Elliott	Louisville	LRL-2015-1022-pgj
8	Laurel Gorge - Howard Tract	Approved - Terminated	Elliott	Louisville	LRL-2014-276-pgj
9	White Oak Creek	Approved - Terminated	Greenup	Louisville	LRL-2012-787-pgj
10	Hitchins	Approved - Terminated	Carter	Louisville	LRL-2016-374-pgj
11	Barrett Creek	Approved - Terminated	Carter	Louisville	LRL-2012-635
12	Clifty Cr	Approved - Terminated	Elliott	Louisville	LRL-2013-867-pgj
13	Ben Willim Branch	Approved - Terminated	Lewis	Louisville	-
14	Keys Creek	Approved - Terminated	Boyd	Louisville	-
15	Pigeon Roost	Approved - Terminated	Boyd	Louisville	LRL-2012-26-pgj
16	Flutylick Branch	Approved - Terminated	Martin	Louisville	-
17	Buffalo Cr	Approved - Terminated	Johnson	Louisville	-
18	Cat Fork	Approved - Terminated	Lawrence	Louisville	LRL-2012-132-pgj
19	Stan Br	Approved - Terminated	Carter	Louisville	LRL-2016-374-pgj
20	Pleas Creek	Approved - Terminated	Lawrence	Louisville	LRL-2019-01050-pgj
21	Staggs Br II	Approved - Terminated	Lewis	Louisville	LRL-2019-00436
22	Grassy Cr	Approved - Terminated	Carter	Louisville	LRL-2019-00559-pgj

## Upper Cumberland River Service Area – Active Project Status

There are two active projects in this service area and two in the Long-Term Management phase. These projects are within the USACE Nashville District and the EKSAP region, which utilizes the EIU credit system (**Figure 5, Table 12**).

Burnett Branch, Wayne and McCreary Counties: FILO partnered with the KDOW Wild Rivers program to acquire the property for preservation and restoration. In 2015, the mineral rights were acquired on an initially excepted portion of the property. In 2016, FILO reassessed the entire property according to the Nashville USACE's new stream assessment protocol. In 2017, the property's deed was amended to include restrictions with language suitable to USACE. In 2018, the Mitigation Plan was completed, and the project was put on public notice in preparation for the 401 WQC. In 2019, FILO submitted a Phase 2 Archaeological Survey Report for Section 106 of the National Historic Preservation Act and a Biological Assessment for Section 7 of the Endangered Species Act. In 2020, FILO received concurrence for Section 106. Some preparation for native grassland conversion was implemented KY Nature Preserves (KNP) staff in 2021.

Sinking Valley, Pulaski County: The Mitigation Plan for preservation was accepted in December 2013. This project has bi-annual monitoring requirements for 10 years with the most recent report submittal in 2019 (Year 5 of 10). KDFWR staff monitored the site in 2021 and will submit the report (2021; Year 7 of 10).

Figure 5. Project Status in the Upper Cumberland River Service Area

## Upper Cumberland River Service Area Projects 2021

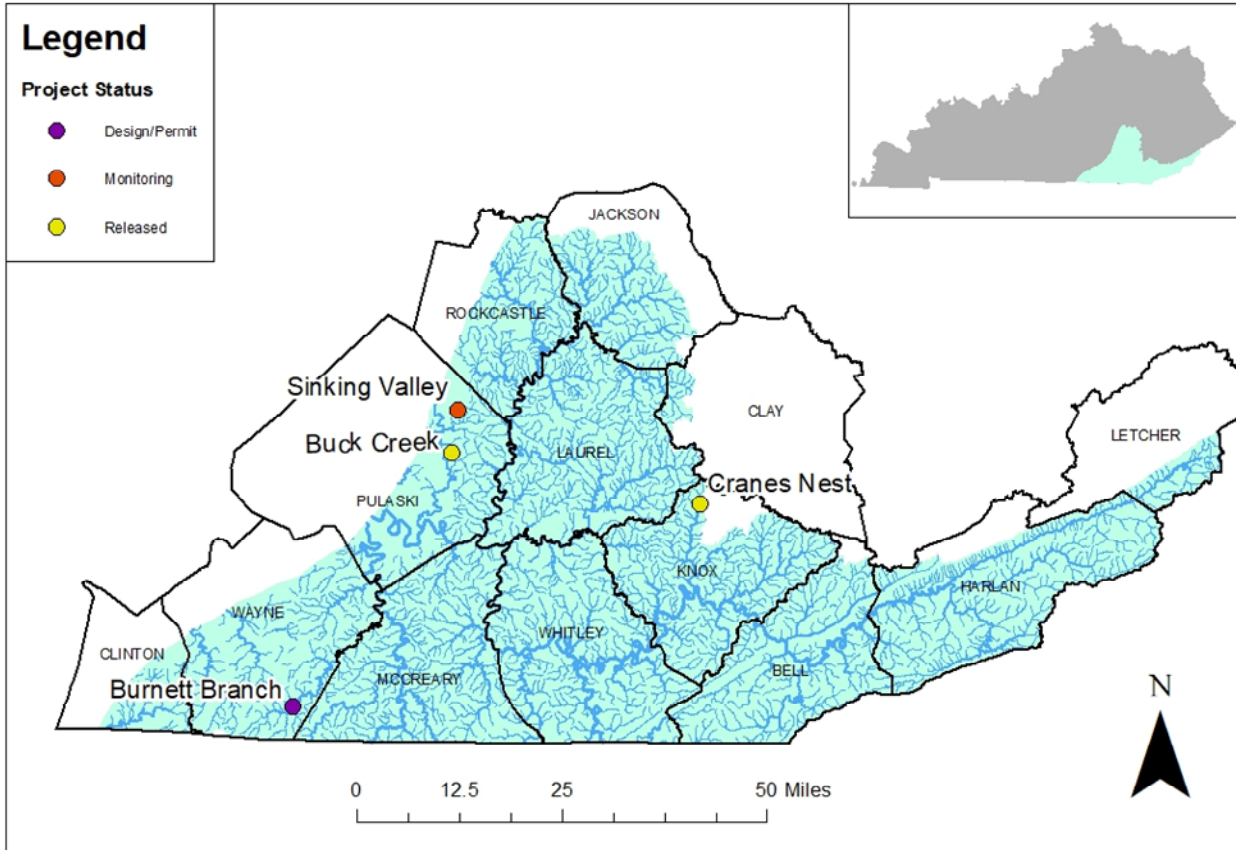


Table 13. Project Status in the Upper Cumberland River Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Burnett Br	Design/Permit	Wayne McCreary	Nashville	LRN-2013-00116
3	Sinking Valley	Monitoring - YR 7 (of 10)	Pulaski	Nashville	LRN-2012-00326
2	Cranes Nest	Released - Long Term Management	Knox	Nashville	2009-01424
4	Buck Cr - preservation	Released - Long Term Management	Pulaski	Nashville	
1	Steele Branch	Approved - Terminated	Wayne McCreary	Nashville	LRN-2012-01244
2	Mulberry Cr	Approved - Terminated	Whitley	Nashville	LRN-2016-00783
3	Lonesome Cr	Approved - Terminated	Wayne	Nashville	LRN-2018-00488

## Lower Cumberland River Service Area – Active Project Status

There are four active projects in this service area and two in the Long-Term Management phase. These projects are within the USACE Nashville District and the KAP region, which utilizes the AMU credit system. This service area has two distinct geographic areas in Kentucky, one in Western Kentucky and one in south-central Kentucky (**Figure 5, Table 13**).

Blue Spring Creek, Trigg County: The project is entirely within Lake Barkley State Resort Park with a substantial part on the park's golf course. In 2020, FILO started construction. In 2021, construction continues.

Hatchery Creek, Russell County: Construction began in August 2014 with final project completion in early 2016. FILO submitted the Year 5 monitoring report in 2020. A “virtual” compliance visit was held with the IRT in November 2021 to discuss project release options. A final decision is pending.

Mud Camp II and III, Cumberland County: Mud Camp I was an approved project but later terminated due to landowner. Mud Camp II is roughly 800 acres and was acquired by KDFWR in 2021. Mud Camp III received IRT approval early 2021 and is still waiting on approval for use of Reserve Funds.

Crow Creek, Clinton County: Approved by the IRT in 2020, Crow Creek is 890 acres with Cumberland River frontage. It is expected to generate over 56,000AMUs. The property was acquired by KDFWR in 2021.



Figure 6. Project Status in the Lower Cumberland River Service Area

## Lower Cumberland River Service Area Projects 2021

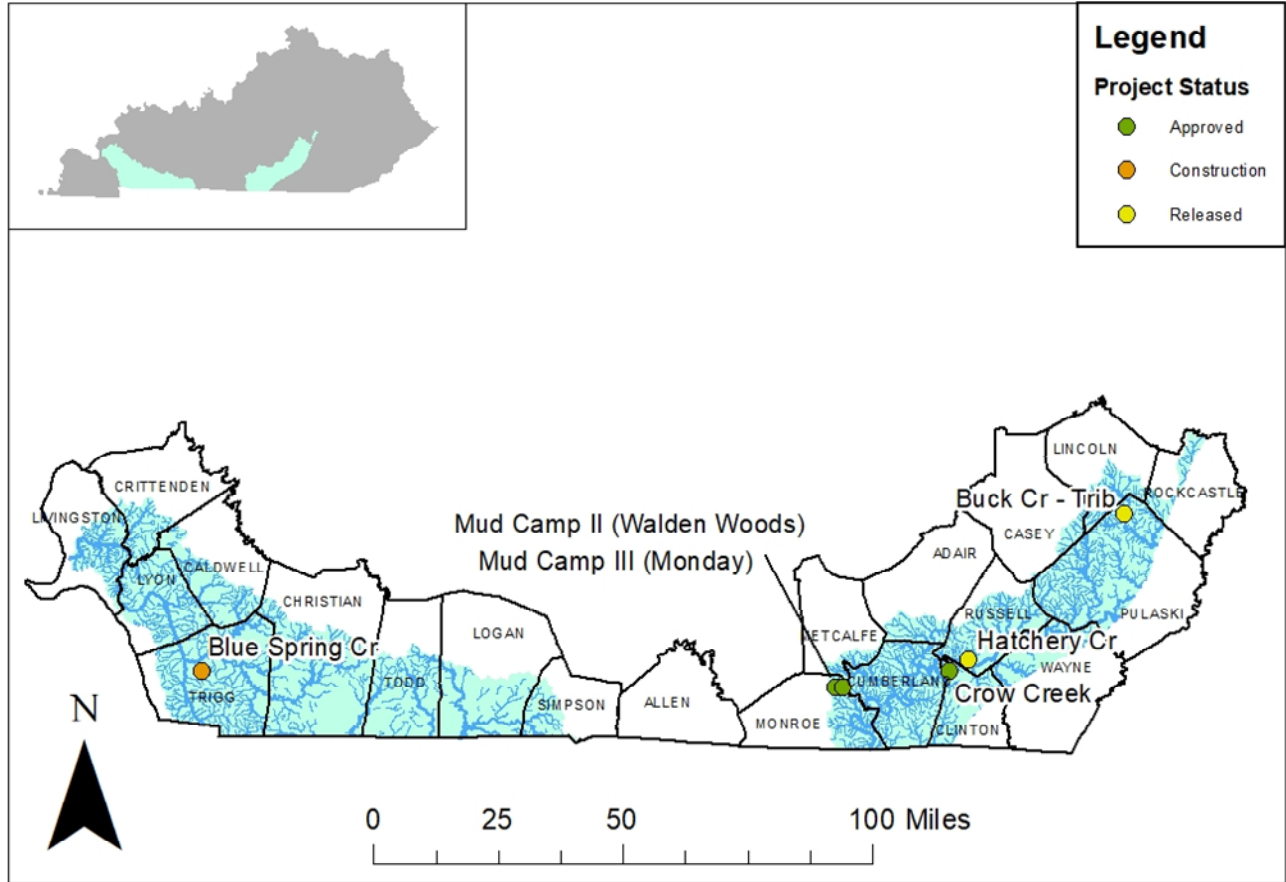


Table 14. Project Status in the Lower Cumberland River Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Mud Camp II	CP Approved	Cumberland	Nashville	LRN-2020-00540
2	Mud Camp III	CP Approved	Cumberland	Nashville	LRN-2020-01203
3	Crow Creek	CP Approved	Clinton	Nashville	LRN-2020-00539
4	Blue Spring Cr	Construction	Trigg	Nashville	LRN-2013-00776
5	Hatchery Cr	Release Pending	Russell	Nashville	LRN-2010-00444
6	Buck Cr - Trib	Released - Long Term Management	Pulaski	Nashville	LRN-2006-2255
1	Puncheon Cr	Approved - Terminated	Pulaski	Nashville	-
2	Bear Den Hollow	Approved - Terminated	Pulaski	Nashville	LRN-2016-00784
3	Doan Springs	Approved - Terminated	Crittenden	Nashville	LRN-2017-00426
4	Elkton Lake	Approved - Terminated	Todd	Nashville	LRN-2018-00451
5	Ferguson Cr	Approved - Terminated	Livingston	Nashville	LRN-2018-00128
6	Mud Camp I	Approved - Terminated	Cumberland	Nashville	LRN-2019-00761

## Upper Licking River Service Area – Active Project Status

There are four active projects in this service area and one in the Long-Term Management phase. These projects are within the USACE Louisville District and the EKSAP region, which utilizes the EIU credit system. (**Figure 7, Table 14**).

Broke Leg Creek, Morgan County: Approved in late 2016, this property has over 35,000 feet of stream length. In 2017, the landowner signed a land contract with the intent to donate a conservation easement. In 2019 and 2020, FILO conducted the Preliminary Design/JD and Assessment Verification Meetings. In 2021, FILO submitted a Biological Assessment for Section 7 of the Endangered Species Act, a Phase I Archaeological Report for Section 106 of the National Historic Preservation Act, and a draft Mitigation Plan, and continued working on the easement and design.

Horse Mill Branch, Morgan County: In 2021, KDFWR acquired the property. In 2021, FILO started designing the project, worked on a Biological Assessment for Section 7 of the Endangered Species Act, submitted a Phase I Archaeological Report and Cultural Resources Report for Section 106 of the National Historic Preservation Act, and conducted the Preliminary Design/JD and Assessment Verification Meetings.

Morgan Co. Extension Wetland, Morgan County: KDFWR acquired the property in 2021. Over 50 acres are proposed for wetland restoration.

Slabcamp Branch, MSU Property, Rowan County: In 2021, FILO acquired 142 acres at the downstream end of the project and conducted the Preliminary Design/JD and Assessment Verification Meetings.

Figure 7. Project Status in the Upper Licking River Service Area

## Upper Licking River Service Area Projects 2021

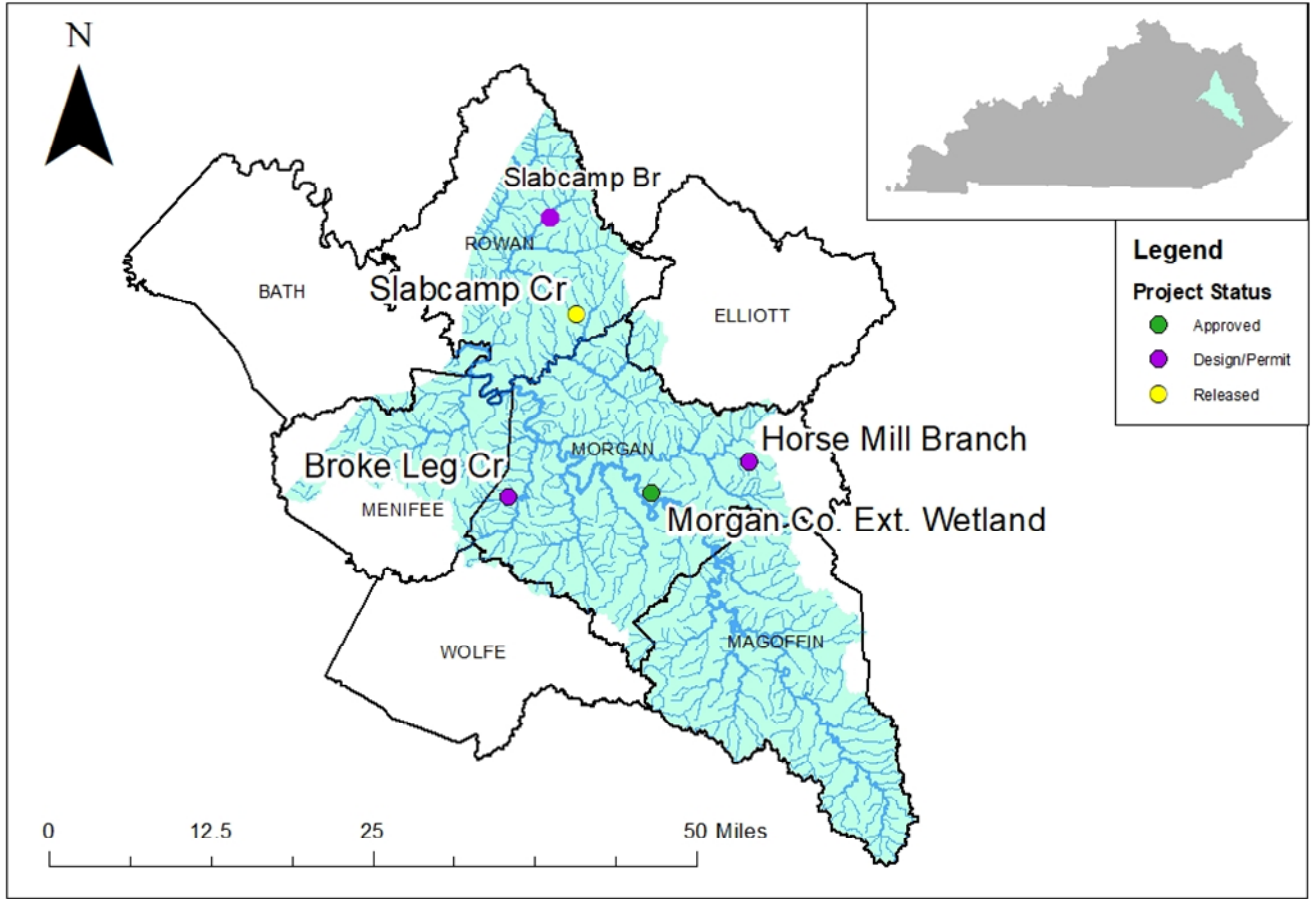


Table 15. Project Status in the Upper Licking Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Morgan Co. Ext. Wetland	CP Approved	Morgan	Louisville	LRL-2018-00682
2	Slabcamp Branch MSU	CP Approved	Rowan	Louisville	LRL-2018-00562
3	Horse Mill Branch	Design/Permit	Morgan	Louisville	LRL-2018-00100
4	Broke Leg Cr	Design/Permit	Morgan	Louisville	LRL-2016-00371-pgj
5	Slabcamp Cr	Released - Long Term Management	Rowan	Louisville	LRL-2009-762-pgj
1	Straight Cr	Approved - Terminated	Morgan	Louisville	LRL-2015-896
2	Slabcamp Cr #2	Approved - Terminated	Rowan	Louisville	-
3	Ratliff	Approved - Terminated	Meniffee	Louisville	LRL-2016-896

## Lower Licking River Service Area – Active Project Status

There are three active projects in this service area and two in the Long-Term Management phase. These projects are within the USACE Louisville District and the KAP region, which utilizes the AMU credit system (**Figure 8, Table 15**).

Big Farm, Bath County: The project was approved in 2014 and the 490-acre property was purchased in 2015. It is now part of the Clay WMA. In 2020, FILO constructed most of the project. Some repairs were needed due to large flood events in 2020-21. Repairs commenced late in 2021 with planting following, thus requiring an updated As-built report. The report is under revision with anticipated submittal in early 2022. Data collection commenced in 2021, but due to timing of events and repairs, monitoring Year 1 will commence in 2022.

Myers Station, Nicholas County: The 462-acre property was purchased in 2014 and became part of the Clay WMA. FILO submitted the Year 5 monitoring report in 2021. Some remedial actions are required on Coon and Cassidy Creeks on the southern portion of the property and will be completed via a design-bid-build contract. The North side of the project is meeting success criteria goals and the KDFWR discussed release with the IRT. Further discussion will be held during a compliance visit. Final partial credit release determinations are pending.

Rock Lick Creek, Fleming County: Approved in 2017, this project will provide approximately 34,000 stream credits. The state-owned Maxey Flats property is roughly 1,000 acres and contains a former radioactive waste disposal site. In 2018, FILO hired a consultant to start collecting data for a project design. In 2019 and 2020, FILO continued to collect survey data and design the project. In 2021, FILO conducted the Preliminary Design/JD and Assessment Verification Meetings

Salt Lick Creek, Bath County: The site entered the LTM phase in 2020. A repair effort is in place to correct some eroded banks. The effort is schedule to commence in Summer 2022.

Figure 8. Project Status in the Lower Licking River Service Area

## Lower Licking River Service Area Projects 2021

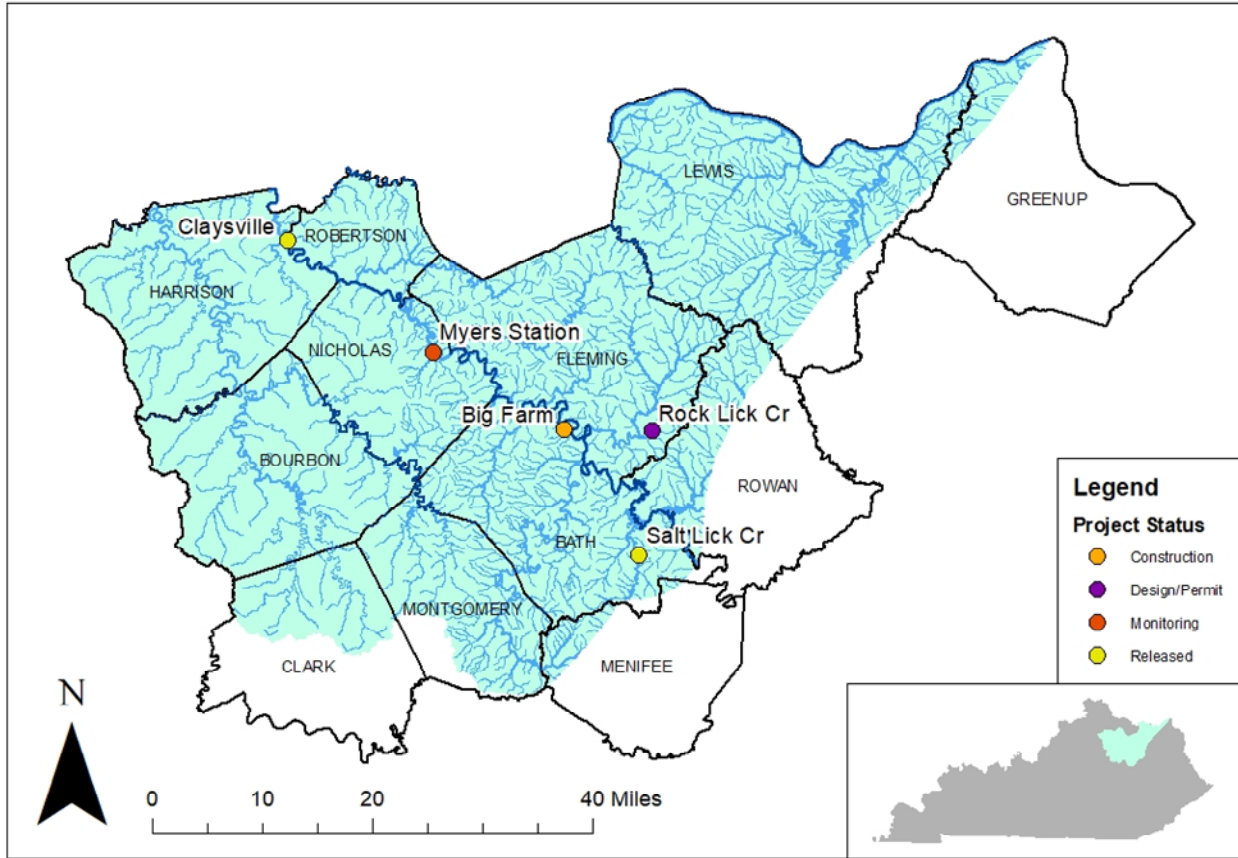


Table 16. Project Status in the Lower Licking Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Big Farm	Construction	Bath	Louisville	LRL-2014-209-pgi
2	Rock Lick Cr	Design/Permit	Fleming	Louisville	LRL-2016-393
3	Myers Station	Monitoring - YR 5	Nicholas	Louisville	LRL-2012-637-pgi
4	Salt Lick Cr	Released - Long Term Management	Bath	Louisville	LRL-2011-891-pgi
5	Claysville	Released - Long Term Management	Bath	Louisville	LRL-2011-891-pgi
1	Martin Mill Branch	Approved - Terminated	Fleming	Louisville	LRL-2014-443-pgi
2	Greasy Cr	Approved - Terminated	Robertson	Louisville	-

## Upper Kentucky River Service Area – Active Project Status

There are six active projects in this service area and eight in the Long-Term Management phase. These projects are within the USACE Louisville District and the EKSAP region, which utilized the EIU credit system (**Figure 9, Table 16**).

East Fork Indian Creek, Menifee County: The project is in the Daniel Boone National Forest, with permanent protection provided by the U.S. Forest Service (USFS) Management Plan. In 2019, FILO staff planted additional container trees to improve woody stem density and diversity. The Year 5 monitoring report was submitted in December 2020. There are some areas identified for repairs as noted in the 2019 report and during field visits. FILO initiated a repair plan, with contract awarded in November 2020. The effort was completed in December 2021 with final planting to follow in early 2022. The IRT will view the repair document and conduct a site visit to discuss future actions (i.e., release, extended monitoring).

Ross Creek 1 & 2, Lee and Estill Counties: The project is adjacent to the USFS Daniel Boone National Forest. The 640-acre property was purchased in 2014. In 2020, FILO completed construction of the project. The As-built report was submitted in May 2021. Year 1 Monitoring commenced in 2021 with a report submitted in December 2021.

Ross Creek 3, Lee County: This project was approved in 2017. In 2019, FILO purchased the 290-acre property. No additional progress was made in 2021.

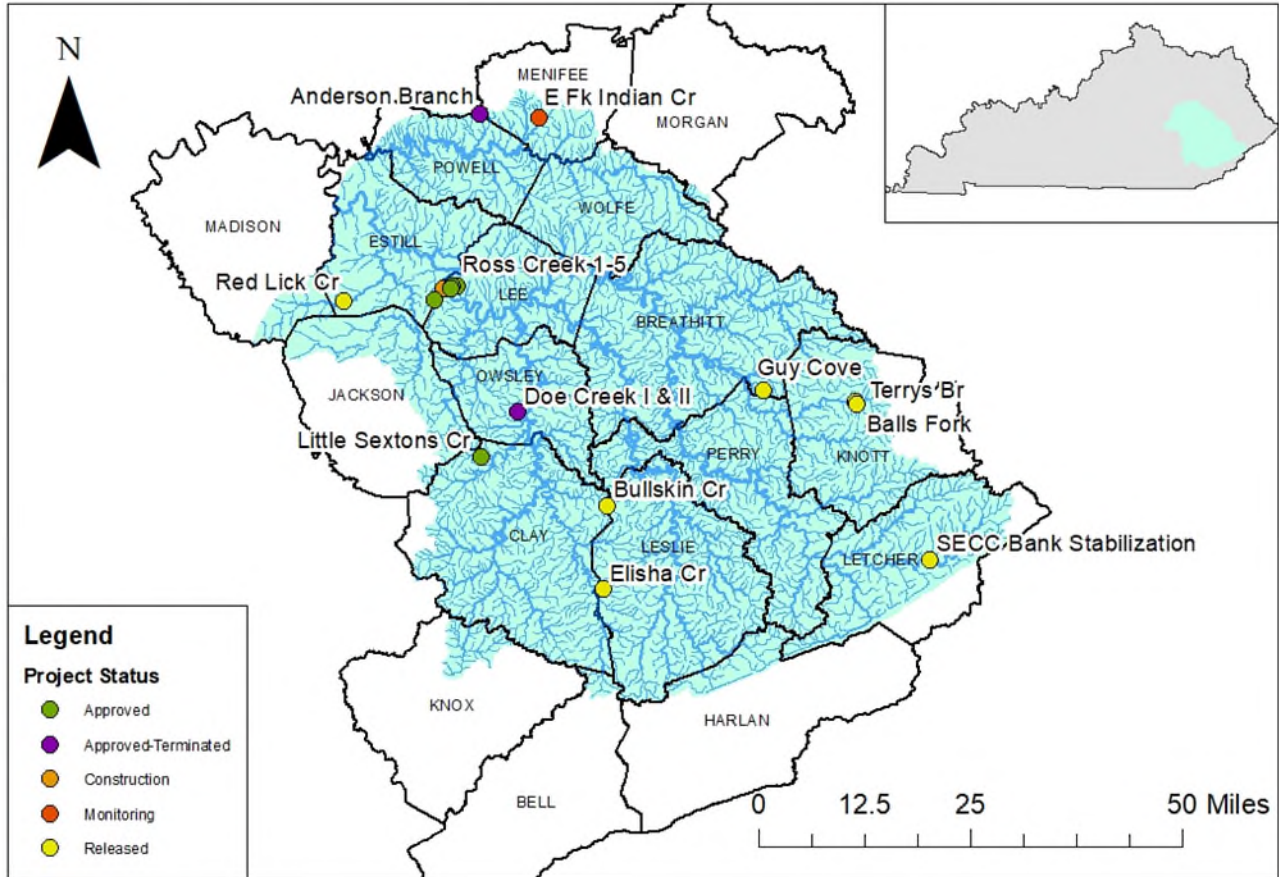
Ross Creek 4, Estill and Lee Counties: This project was approved by the IRT in 2019. KDFWR plans to purchase the property, which adjoins Ross Creek 1 & 2 through the Daniel Boone National Forestland. The landowner is currently working to resolve title issues before moving forward.

Ross Creek 5 & 6, Lee County: An on-site IRT visit was conducted in 2021 and it received IRT approval. Currently title issues are being resolved before moving forward with acquisition(s).

Little Sexton Creek, Jackson and Clay Counties: This project was approved by the IRT in 2019. In 2021, FILO closed on the 1,585-acre property, collected field data for design, collected field data for a Biological Assessment for Section 7 of the Endangered Species Act, and conducted the Preliminary Design/JD and Assessment Verification Meetings.

Figure 9. Project Status in the Upper Kentucky River Service Area

## Upper Kentucky River Service Area Projects 2021



**Table 17. Project Status in the Upper Kentucky River Service Area**

Count	Project	Status	County	USACE District	404 Permit #
1	Ross Cr #3	CP Approved	Lee	Louisville	LRL-2017-00042
2	Ross Cr #4	CP Approved	Estill	Louisville	LRL-2019-563
3	Ross Cr #5	CP Approved	Lee	Louisville	LRL-2020-288
4	Ross Cr #6	CP Approved	Lee	Louisville	LRL-2020-326
5	Little Sextons Creek	CP Approved	Jackson	Louisville	LRL-2018-00981-pgj
6	Ross Cr #1 & #2	Monitoring - YR 1	Lee	Louisville	LRL-2013-143
7	E Fk Indian Cr	Release Pending	Menifee	Louisville	LRL-2012-273
8	Elisha Cr	Released - Long Term Management	Leslie	Louisville	LRL-2011-404-pgj
9	Balls Fork	Released - Long Term Management	Knott	Louisville	2002-01447
10	Bullskin Cr	Released - Long Term Management	Leslie	Louisville	200500205-pgj
11	Guy Cove (Laurel Fork)	Released - Long Term Management	Breathitt	Louisville	LRL-2007-615
12	Red Lick Cr	Released - Long Term Management	Estill	Louisville	LRL-2005-131-lad
13	SECC Bank Stabilization	Released - Long Term Management	Letcher	Louisville	LRL-2005-1004-the
14	Terrys Br	Released - Long Term Management	Knott	Louisville	200500205
1	Upper Cane Creek	Approved - Terminated	Menifee	Louisville	LRL-2009-433-pgj
2	Frozen Creek	Approved - Terminated	Breathitt	Louisville	-
3	Hinton Branch	Approved - Terminated	Estill	Louisville	-
4	North Fork Kentucky River	Approved - Terminated	Perry	Louisville	-
5	Red Lick #2	Approved - Terminated	Estill	Louisville	-
6	Holly Fork	Approved - Terminated	Owsley	Louisville	LRL-2015-1020-pgj
7	Sand Lick	Approved - Terminated	Powell	Louisville	-
8	Troublesome Cr	Approved - Terminated	Perry	Louisville	-
9	Persimmon Hollow	Approved - Terminated	Leslie	Louisville	-
10	Middle Fork Cane Cr	Approved - Terminated	Powell	Louisville	LRL-2015-583-pgj
11	Muir Valley	Approved - Terminated	Wolfe	Louisville	LRL-2016-1060

**Lower Kentucky River Service Area – Active Project Status**

There are six active projects in this service area and three in the Long-Term Management phase. These projects are within the USACE Louisville District and the KAP region, which utilizes the AMU credit system (**Figure 10, Table 17**).

**Minors Creek, Owen County:** The 309-acre property was purchased in 2014 and is now a part of the Kleber WMA. Construction began in the fall of 2017 and continued throughout 2018 with completion and final planting in early 2019. The as-built survey and first year of monitoring were completed in 2019 with reports submitted in December 2019. The Year Three monitoring report was submitted in December 2021. A credit release request will be discussed based on performance standards met.

**Minors Creek 2, Owen County:** In 2017, FILO purchased the 70-acre property. The CP was approved in 2021.



Pond Creek, Owen County: The project is on the Chesney Tract of the Kentucky River WMA. It was approved in 2015 and the design started the same year. In 2016, FILO asked the design consultant for some design modifications. No additional progress was made in 2021.

Red Oak Creek Drainage C, Owen County: The project was approved in 2014 and was purchased in 2015. The 601-acre property was added to the Dr. James Rich WMA and design began in 2016. In 2017, FILO received the 401 WQC and submitted the 404-permit application. In 2018, FILO received the 404 permit and began construction. Final completion occurred in early 2019 with the as-built and Year 1 monitoring reports submitted in December 2019. The Year Three Monitoring Report was submitted in December 2021. A credit release request letter will follow based on performance standards met.

Red Oak Drainage ABD, Owen County: The project was approved in 2014 and was purchased in 2015. The 601-acre property was added to the Dr. James Rich WMA. In 2020, FILO began design and Mitigation Plan development. In 2021, FILO submitted a Biological Assessment for Section 7 of the Endangered Species Act, received concurrence for Section 106 of the National Historic Preservation Act, and conducted the Preliminary Design/JD and Assessment Verification Meetings.

Rogers Gap, Scott County: The project included the acquisition of 2,500 acres containing approximately 28 miles of stream channel. The design-build started in 2013 and construction was completed in 2016. FILO submitted the Year 2 monitoring in 2018. In 2019, a request was made to the IRT to construct an office and enclosed shooting range in the southern portion of the Veterans WMA (Rogers Gap) property. Since this is considered a land use change, IRT consultation was required. The proposed work will occur on the southern portion of the parcel, outside of all mitigation work and does not require a permit, Instrument, or site protection modification, but did require written approval upon consultation with the IRT. In an email from the Louisville District USACE dated September 11, 2019, the request was approved. The email was filed in our records. This approval was documented in the 2019 annual report. In early 2020, an extensive planting effort occurred across the site with installation of 15,500 live stakes and over 300 container trees. The Year Four monitoring report was submitted in December 2020 and documents this effort. The Year 5 Monitoring Report was submitted in December 2021. The KDFWR intends to request monitoring release on portions of the project that are meeting success criteria goals. This request will be in conjunction with IRT site inspections.

Figure 10. Project Status in the Lower Kentucky Service Area

## Lower Kentucky River Service Area Projects 2021



Table 18. Project Status in the Lower Kentucky Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Minors Cr 2	CP Approved	Owen	Louisville	LRL-2019-01049
2	Pond Creek	Design /Permit	Owen	Louisville	LRL-2014-191-pgj
3	Red Oak Creek ABD	Design /Permit	Owen	Louisville	LRL-2018-00770-pgj
4	Minors Cr	Monitoring - YR 3	Owen	Louisville	LRL-2013-91-pgj
5	Red Oak Creek C	Monitoring - YR 3	Owen	Louisville	LRL-2014-500-pgj
6	Rogers Gap	Monitoring - YR 5	Scott	Louisville	LRL-2013-134-pgj
7	Elm Fk	Released - Long Term Management	Owen	Louisville	LRL-2012-263-pgj
8	Mill Cr	Released - Long Term Management	Fayette	Louisville	LRL-2009-611-pgj
9	Cove Spring	Released - Long Term Management	Franklin	Louisville	LRL-2009-614 pgj
1	Boling Branch	Approved - Terminated	Henry	Louisville	LRL-2017-261
2	Wolf Run	Approved - Terminated	Fayette	Louisville	200600323-pgj

## Salt River Service Area – Active Project Status

There are eleven active projects in this service area and one in the Long-Term Management phase. These projects are within the USACE Louisville District and KAP region, which utilizes the AMU credit system (**Figure 11, Table 18**).

Big Lick Hollow, Nelson County: IRT approved in 2018, this project was presented as part of the Full Delivery contract with Stantec Consulting Services Inc. It is expected to generate over 21,000 AMU stream credits and will be permanently protected with a conservation easement. In 2020, FILO (and Stantec Consulting Services, Inc.) conducted the Preliminary Design/JD and Assessment Verification Meetings, filed the easement, submitted a draft Mitigation Plan, and submitted for a Floodplain Permit and 401 WQC. In 2021, FILO (and Stantec Consulting Services, Inc.) submitted a Biological Assessment for Section 7 of the Endangered Species Act, received a Floodplain Permit exemption, and submitted a revised Mitigation Plan.

Dodge Gap, Jefferson County: IRT approved in 2018, this project is in the Jefferson Memorial Forest. It is expected it generate roughly 4,900 stream AMUs and will be permanently protected with a conservation easement. In 2021, a feasibility study was done to add onto the project.

Floyd's Fork, Jefferson County: IRT approved in early 2016, this project is comprised of three separate areas: Big Vista Valley, Turkey Run, and Big Beech Woods. Altogether, there is the potential for over 12,000 stream AMUs and 5.5 wetland AMUs. After several attempts to proceed with the project, a new point of contact was established in 2018. In 2021, these projects were still being considered by the park manager.

Harrison Fork, Nelson County: In 2017, FILO (and University of Louisville) received a Floodplain Permit. In 2019, FILO (and University of Louisville) received the 401 WQC. In 2021, FILO closed on the property.

Otter Creek, Meade County: The project has the largest watershed of any FILO project with just over 100 square miles. Because of its size, good water quality, and significant physical degradation, the potential exists to create outstanding habitat that will support an excellent fishery and canoe recreation. In 2019, FILO completed the Environmental Assessment, a draft Mitigation Plan, and received concurrence for Section 7. In 2020, FILO continued design and Mitigation Plan development. In 2021, FILO continued to work on deed restrictions.

Stillwell Branch, Larue County: IRT approved in 2018, this project is on KDFWR's Rolling Fork WMA. It is expected to generate over 42,000 AMU stream credits and will be permanently protected with deed restrictions. In 2020, FILO conducted the Preliminary Design/JD and Assessment Verification Meetings and continued design and Mitigation Plan development. In 2021, FILO submitted a draft Mitigation Plan, submitted a Biological Assessment for Section 7 of the Endangered Species Act, and received concurrence for Section 106 of the National Historic Preservation Act.

Rolling Fork Floodplain, Larue and Nelson Counties: Approved by the IRT in 2020, this project is on KDFWR's Rolling Fork WMA. It is expected to generate 4,800 AMU stream credits, 64 wetland AMU credits and will be permanently protected with deed restrictions. In 2021, FILO

started designing the project, collected field data for a Biological Assessment for Section 7 of the Endangered Species Act, and submitted a Phase I Archaeological Report for Section 106 of the National Historic Preservation Act.

Rolling Fork River, Larue and Nelson Counties: Approved by the IRT in 2020, this project is on the KDFWR's Rolling Fork WMA and is adjacent to the Rolling Fork Floodplain project. It is expected to generate 21,900 AMU stream credits. In 2021, FILO started designing the project, collected field data for a Biological Assessment for Section 7 of the Endangered Species Act, and submitted a Phase I Archaeological Report for Section 106 of the National Historic Preservation Act.

Wolf Run, Jefferson County: The project is almost entirely on the Jefferson Memorial Forest. It will be developed in coordination with the Louisville-Jefferson County Metro Parks. Design began in late 2015. Draft easements were updated and approved in 2021.

Floyd's Fork Wetland, Jefferson County: This project is in The Parklands of Floyds Fork with the goal to provide the public a wildlife viewing area of wetland habitat. It is estimated to generate 6 AMU wetland credits. The project would require a donated easement and in 2021 the park managers were still considering their options.

Mill Creek, Jefferson County: Approved by the IRT in 2020, this project is a large-scale urban project with over 180 public and private parcels that are projected to protect over 2,000 acres from development and stream encroachment. The project could generate up to approximately 69,000 AMU stream credits and 79 AMU wetland credits. In 2021, title and appraisal work progressed.

Figure 11. Project Status in the Salt River Service Area

## Salt River Service Area Projects 2021

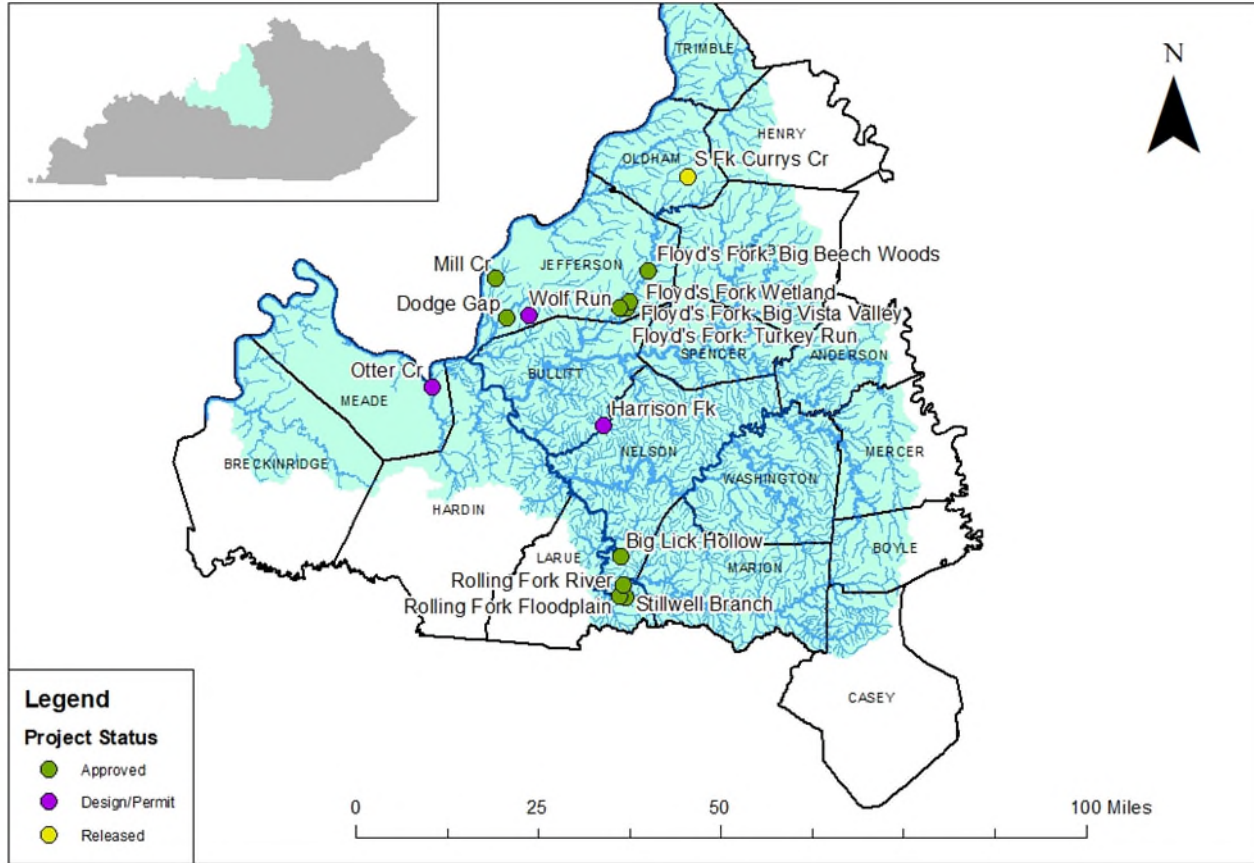


Table 19. Project Status in the Salt River Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Mill Creek	CP Approved	Jefferson	Louisville	LRL-2020-00188
2	Dodge Gap	CP Approved	Jefferson	Louisville	LRL-2018-00112
3	Floyd's Fork Wetland	CP Approved	Jefferson	Louisville	LRL-2019-00933-pgj
4	Rolling Fork Floodplain	Design/Permit	Larue/ Nelson	Louisville	LRL-2020-00630-pgj
5	Rolling Fork River	Design/Permit	Laure	Louisville	LRL-2020-00631-pgj
6	Floyd's Fork Streams	CP Approved	Jefferson	Louisville	LRL-2015-216-pgj
7	Big Lick Hollow	Design/Permit	Nelson	Louisville	LRL-2018-00383-pgj
8	Stillwell Branch	Design/Permit	Larue	Louisville	LRL-2017-00906-pgj
9	Harrison Fk	Design/Permit	Nelson	Louisville	LRL-2012-274-pgj
10	Otter Cr	Design/Permit	Meade	Louisville	LRL-2013-425-pg
11	Wolf Run	Design/Permit	Jefferson	Louisville	LRL-2014-60-pgj
12	S Fk Curry's Cr	Released - Long Term Management	Oldham	Louisville	LRL-2009-98-pgj

## Green River Service Area – Active Project Status

There are eight active projects in this service area and two in the Long-Term Management phase. These projects are within the USACE Louisville District and the KAP region, which utilizes the AMU credit system (**Figure 12, Table 19**).

Ivy Creek, Warren County: Approved by the IRT in 2019, this project is on private property with over 3 miles of Green River frontage. It is estimated to produce over 37,000 AMU stream credits and 18 AMU wetland credits and will be permanently protected with a conservation easement. In 2021, FILO finalized title work and appraisal on the property.

Big Rivers WMA Wetland, Union County: The project was approved in 2017. It is located on the existing Big Rivers WMA and it will provide over 32 wetland credits. In 2018, FILO hired a consultant to collect data and start on a project design. In 2019, FILO continued working on the design and conducted the Preliminary Design Meeting. In 2020, FILO conducted the JD and Assessment Verification Meeting and submitted a draft Mitigation Plan. In 2021, FILO continued working on the Mitigation Plan and submitted a Biological Assessment for Section 7 of the Endangered Species Act and a Phase I Archaeological Report for Section 106 of the National Historic Preservation Act.

Eagle Creek Tributary, Union County: The project is entirely within the Higginson-Henry WMA. The responsibility for fixing several plugs in the abandoned main channel is still awaiting resolution between the design consultant and the contractor. To assess the current conditions of the site, monitoring commenced with the Year 5 report submitted in 2021.

Goose Creek, Casey County: The project was approved in 2013. In 2020, FILO completed construction. Flooding caused some damages resulting in the need for an Adaptive Management Plan (AMP). Data collection for the AMP is currently underway with a draft submittal in early 2022. Approval and implementation of the AMP are anticipated for 2022.

Trammel Creek, Allen County: FILO submitted the Year 5 monitoring report in 2014. However, the need for additional repairs and planting extended monitoring. In 2017, FILO planted additional native trees of various sizes and submitted the Year 8 monitoring report. To further help with fence damage from flooding and livestock entering the easement, the landowner was approached regarding an easement expansion. This expansion was complete in 2018 which relocated the livestock fence farther from the stream. There are some areas identified for repairs during site visits. FILO developed a repair plan in 2019. The contract for this effort was awarded in November 2020 with repair work commencing in early 2022. Remedial planting and monitoring will commence following the effort.

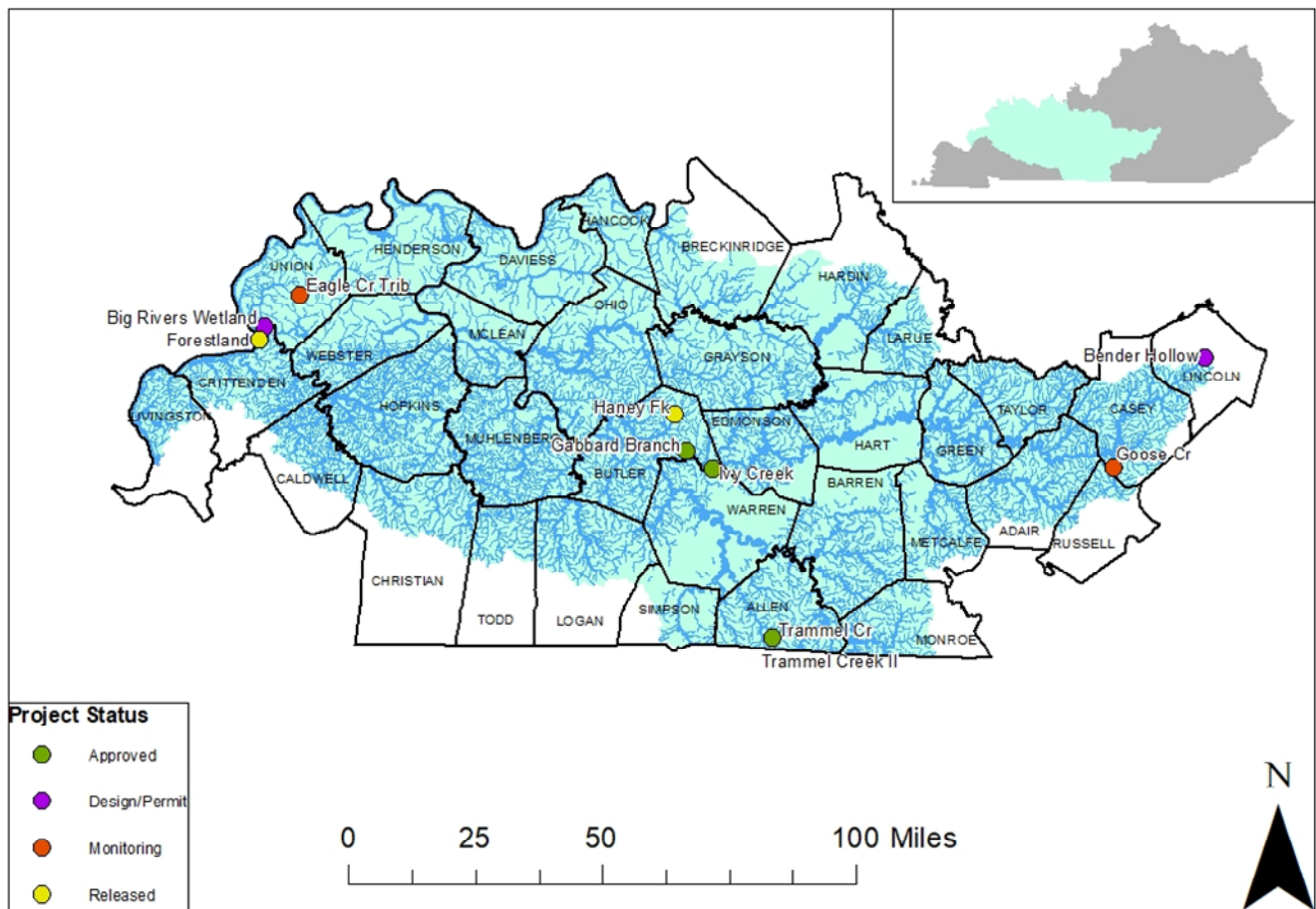
Trammel Creek II, Allen County: IRT approved in 2018, this project is directly downstream of the original Trammel Creek project. In 2020, FILO hired a Design-Build team to design and construct the project. Due to property boundary investigations yielding less of the project within the property, this project is on hold until further notice. Project funds will be directed to other developing projects to ensure credit fulfillment obligations are met

Bender Hollow, Lincoln County: In 2020, FILO began working on the Mitigation Plan and design and conducted the Preliminary Design/JD and Assessment Verification Meetings. In 2021, FILO finalized the easement, continued working on the Mitigation Plan and design, submitted a Biological Assessment for Section 7 of the Endangered Species Act, and submitted a Phase I Archaeological Report and Cultural Resources Report for Section 106 of the National Historic Preservation Act.

Gabbard Branch, Butler County: Approved by the IRT in 2020, this project is 763 acres and is expected to produce over 47,000 AMU stream credits and 15 AMU wetland credits. FILO worked with the landowner to resolved title issues in 2021 and was expected to close on the property in early 2022.

*Figure 12. Project Status in the Green River Service Area*

## Green River Service Area Projects 2021



**Table 20. Project Status in the Green River Service Area**

Count	Project	Status	County	USACE District	404 Permit #
1	Trammel Creek II	CP Approved	Allen	Louisville	LRL-2018-00320-pgj
2	Ivy Creek	CP Approved	Warren	Louisville	LRL-2019-00895
3	Bender Hollow	Design/Permit	Lincoln	Louisville	LRL-2018-00982-pgj
4	Gabbard Branch	CP Approved	Butler	Louisville	LRL-2020-00169
5	Big Rivers Wetland	Design/Permit	Union	Louisville	LRL-2016-373-pgj
6	Goose Cr	Construction	Casey	Louisville	LRL-2012-646-pgj
7	Eagle Cr Trib	Monitoring - YR 5	Union	Louisville	LRL-2012-716-pgj
8	Trammel Cr	Release Pending	Allen	Louisville	LRL-2008-936-pgj
9	Forestland	Released - Long Term Management	Union	Louisville	-
10	Haney Fk	Released - Long Term Management	Butler	Louisville	LRL-2004-01363
1	Green River Lock and Dam 6	Approved - Terminated	Edmonson	Louisville	LRL-2016-43-pgj
2	Boys Cr	Approved - Terminated	Barren	Louisville	LRL-2013-545-pgj
3	Green River St Forest Wetland	Approved - Terminated	Henderson	Louisville	LRL-2019-00435
4	Gary Branch	Approved - Terminated	Butler	Louisville	LRL-2020-00052
5	Farmers Cr	Approved - Terminated	Webster	Louisville	LRL-2014-58-pgj

**Jackson Purchase Service Area – Active Project Status**

There are two active projects in this service area and one in the Long-Term Management phase. These projects are within the USACE Memphis and Nashville Districts and the KAP region, which utilizes the AMU credit system (**Figure 13, Table 20**).

Obion Creek 2, Hickman County: The Year 5 monitoring report was submitted in December 2021. Additional maintenance and invasive species treatments are needed to bring the project into compliance. Remedial actions will be discussed in 2022.

Kaler Bottoms, Graves County: The IRT conditionally approved this project in 2019 and it is estimated to generate 7 AMU wetland credits. In 2020, FILO purchased the 40-acre property. It is now part of the Kaler Bottoms WMA.



Figure 13. Project Status in the Jackson Purchase Service Area

## Jackson Purchase Service Area Projects 2021

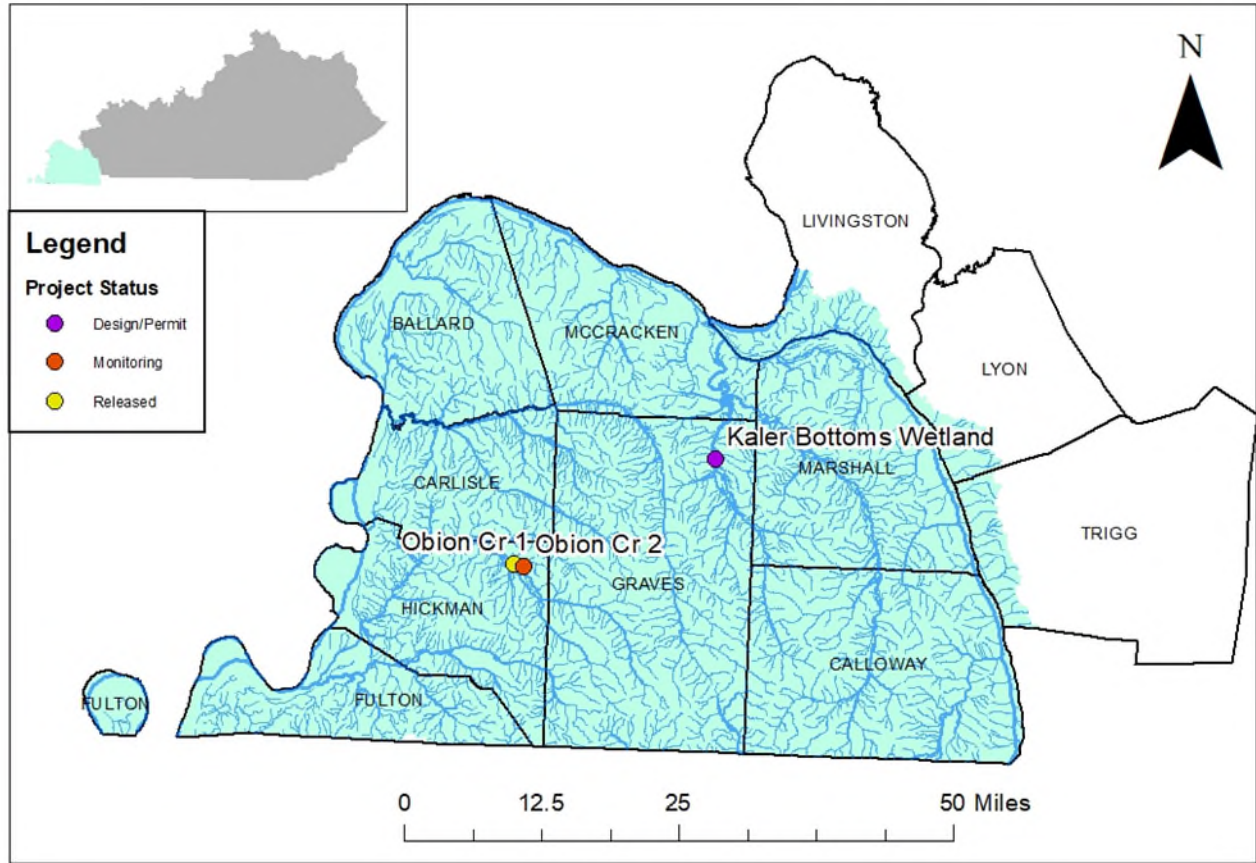


Table 21. Project Status in the Jackson Purchase Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	Obion Cr 2	Monitoring - YR 5	Hickman	Memphis	MVM-2010-074
2	Kaler Bottoms	Design / Permit	Graves	Nashville	LRL-2019-00536
3	Obion Cr 1	Released - Long Term Management	Hickman	Memphis	200300263
1	East Fork Clark's River	Approved - Terminated	Calloway	Nashville	-

## Northern Kentucky Service Area – Active Project Status

There are ten active projects in this service area and none in Long Term Management. These projects are within the USACE Louisville District and the KAP region, which utilizes the AMU credit system (**Figure 14, Table 21**).

Meadowland, Boone County: IRT approved in 2020, this project was presented as part of the Full Delivery contract with Stantec Consulting Services Inc. It is expected to generate over 20,000 AMU stream credits and will be permanently protected with a conservation easement. In 2021, FILO (and Stantec Consulting Services, Inc.) conducted the Preliminary Design/JD and Assessment Verification Meetings, submitted the Mitigation Plan, submitted a Biological Assessment for Section 7 of the Endangered Species Act, and received concurrence for Section 106 of the National Historic Preservation Act.

Middle Creek I, Boone County: The IRT approved this project in 2019 and it is expected to produce almost 6,000 AMU stream credits. This project is located upstream of future projects Middle Creek II & III. FILO closed on the property in 2021.

Middle Creek II, Boone County: This project adjoins the Middle Creek I restoration project and is in the early stages of development. FILO plans to purchase the property and implement permanent deed restrictions. In 2021, FILO worked towards resolving title issues.

Middle Creek III, Boone County: This project was approved by the IRT in 2019 and is downstream of the additional Middle Creek projects. The project is in the early stages of development. In 2020, FILO purchased the 160-acre property.

Steep Creek, Boone County: This project is in the early stages of development but is expected to generate over 15,000 AMU stream credits. At the end of 2021, FILO was in the land contract phase and moving towards securing a survey on the property.

St. Anne Weland, Campbell County. Presented to the IRT in 2020 and approved in 2021, the project is expected to generate about 8 wetland AMU credits. In 2021, FILO was in the land contract phase for the conservation easement.

Gunpowder I, Boone County. Presented to the IRT in 2020 and approved in 2021, the project is 116 acres of a larger effort to restore Gunpowder Creek watershed and is expected to produce over 2,500 AMU credits. In 2021, FILO was waiting for a final response from stakeholders involved with the property.

Second Creek, Boone County: Approved by the IRT in 2021, the project lies along the Ohio River and consists of hardwood bottomlands. Depending on ephemeral mitigation options, the project is expected to generate over 26,000 AMU credits.

Trib to Twelvemile Creek, Campbell County: The IRT approved the project in 2021 and it is in the early stages of development. Located on 266 acres it is expected to produce close to 8,000 AMU credits.

Tribs to Gunpowder / Riddles Run, Boone County: Adjacent to Gunpowder I, this project has potential to add onto existing mitigation projects in the watershed. Approved in 2021 by th IRT, it is located on 293 acres and is expected to produce 6,829 AMU credits.

Figure 14. Project Status in the Northern Kentucky Service Area

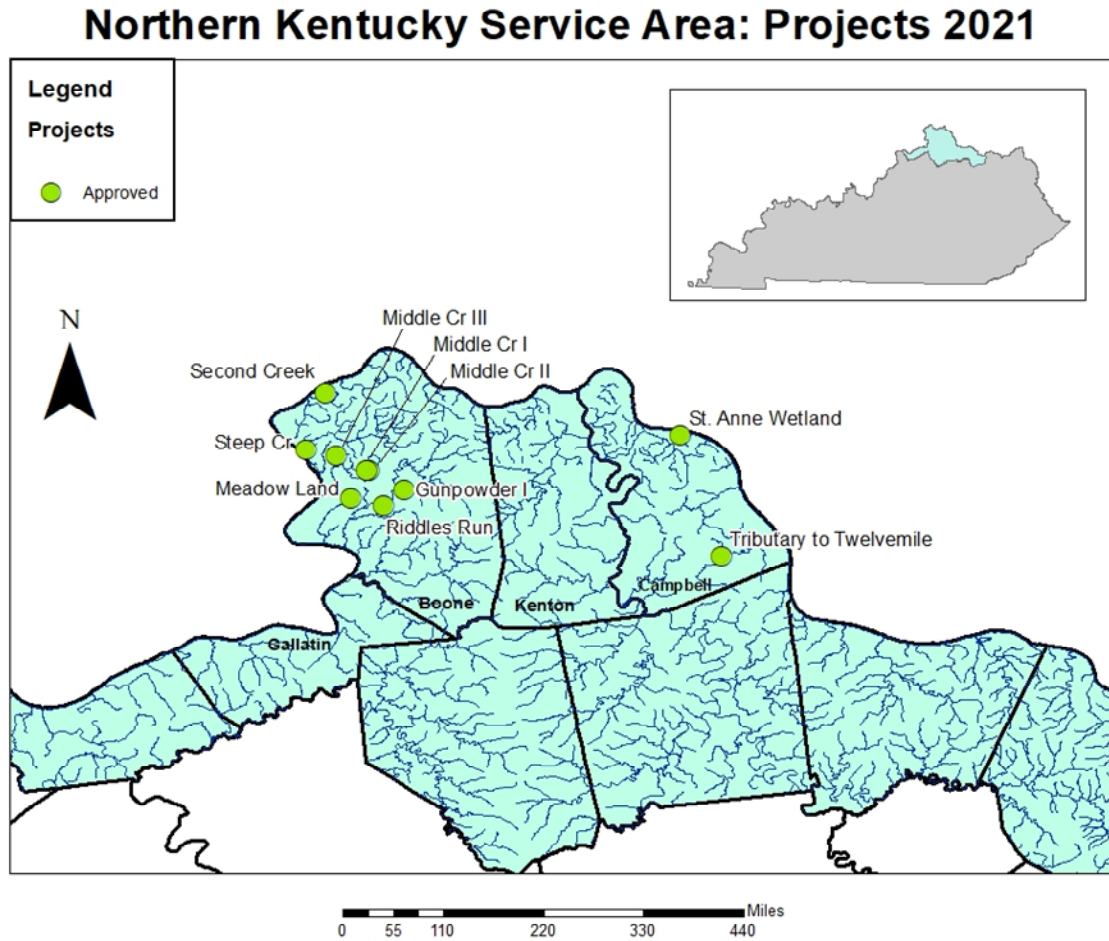


Table 22. Project Status in the Northern Kentucky Service Area

Count	Project	Status	County	USACE District	404 Permit #
1	St. Anne Wetland	CP Approved	Campbell	Louisville	LRL-2020-000186
2	Gunpowder I	CP Approved	Boone	Louisville	LRL-2019-00590
3	Steep Cr	CP Approved	Boone	Louisville	LRL-2018-00383
4	Middle Cr I	Design/Permit	Boone	Louisville	LRL-2019-161
5	Middle Cr II	Design/Permit	Boone	Louisville	LRL-2019-01052
6	Middle Cr III	Design/Permit	Boone	Louisville	LRL-2019-00590
7	Meadow Land	Design/Permit	Boone	Louisville	LRL-2020-00184
8	Trib to Twelve Mile Cr	CP Approved	Campbell	Louisville	LRL-2021-00105
9	Tribs Riddles Run / Gunpowder	CP Approved	Boone	Louisville	LRL-2021-00104
10	Second Creek	CP Approved	Boone	Louisville	LRL-2021-00411
1	Steel Cr	Approved - Terminated	Gallatin	Louisville	LRL-2018-00725

## References

U.S. Army Corps of Engineers. 2018. Modification of the Agreement Concerning In-Lieu Mitigation Fees between U.S. Army Corps of Engineers and Kentucky Department of Fish and Wildlife Resources. Modification #8 Adding a Northern Kentucky Service Area. LRL-2010-325.

U.S. Army Corps of Engineers. 2011. Modification – Number One of the Agreement Concerning In-Lieu Mitigation Fees between U.S. Army Corps of Engineers and Kentucky Department of Fish and Wildlife Resources. LRL-2010-325.

U.S. Army Corps of Engineers. 2008. 33 CFR Chapter II Part 332. Compensatory Mitigation for Losses of Aquatic Resources. Federal Register Vol. 73, No. 70, April 10, 2008.

## Appendix A – CY21 Credit Sales, Costs and Balances

### CY2021 Advanced Credit Sales and Balance

<u>Service Area</u>	<u>Date of Payment</u>	<u>Corps 404 Id. No.</u>	<u>Credits Sold</u>	<u>\$/Credit</u>	<u>Advanced Credits</u>	<u>Balance</u>
<b>Big Sandy Stream (EIU)</b>					CY2021 Beginning Balance	203,781.66
					CY2021 Credit Sales	-
					CY2021 Credit Releases	593.00
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>
<b>Upper Kentucky Stream (EIU)</b>	03/09/21	LRL-2015-601	390.00	870	CY2021 Beginning Balance	208,664.37
	04/01/21	LRL-2017-48	2,947.00	870	CY2021 Credit Sales	3,337.00
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>3,337.00</b>
<b>Upper Licking Stream (EIU)</b>					CY2021 Beginning Balance	226,107.40
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>
<b>Upper Cumberland Stream (EIU)</b>	05/12/21	WQC2021-001-1	59.40	880	CY2021 Beginning Balance	229,506.29
					CY2021 Credit Sales	59.40
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>59.40</b>
<b>Lower Kentucky Stream (AMU)</b>					CY2021 Beginning Balance	218,266.80
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>
<b>Lower Licking Stream (AMU)</b>	09/10/21	LRL-2021-177	725.00	350	CY2021 Beginning Balance	209,252.93
	12/08/21	LRL-2021-107	847.00	350	CY2021 Credit Sales	3,284.00
	12/27/21	LRL-2020-408	1,712.00	350	CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>3,284.00</b>
<b>Lower Cumberland Stream (AMU)</b>	01/25/21	LRL-2020-91	4,576.00	415	CY2021 Beginning Balance	179,338.59
					CY2021 Credit Sales	4,576.00
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>4,576.00</b>
<b>Salt Stream (AMU)</b>					CY2021 Beginning Balance	110,432.96
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>
<b>Green River Stream (AMU)</b>	04/20/21	LRL-2019-443	5,805.00	400	CY2021 Beginning Balance	186,227.94
	10/05/21	LRL-2015-172	2,072.00	400	CY2021 Credit Sales	7,877.00
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>7,877.00</b>
<b>Jackson Purchase Stream (AMU)</b>	02/10/21	LRL-2019-887	5,925.00	405	CY2021 Beginning Balance	237,085.51
					CY2021 Credit Sales	5,925.00
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>5,925.00</b>
<b>Northern Kentucky Stream (AMU)</b>					CY2021 Beginning Balance	-
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
					<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>

## Appendix A – CY21 Credit Sales, Costs and Balances (cont.)

### CY2021 Advanced Credit Sales and Balance (cont')

<u>Service Area</u>	<u>Date of Payment</u>	<u>Corps 404 Id. No.</u>	<u>Credits Sold</u>	<u>\$/Credit</u>	<u>Advanced Credits</u>	<u>Balance</u>
<b>Upper Kentucky Wetland (AMU)</b>	03/09/21	LRL-2015-601	4.410	61,500	CY2021 Beginning Balance	78.850
	04/01/21	LRL-2017-48	0.500	61,500	CY2021 Credit Sales	4.910
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>4.910</b>	CY2021 Ending Balance	73.940
<b>Upper Licking Wetland (AMU)</b>					CY2021 Beginning Balance	85.780
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>	CY2021 Ending Balance	85.780
<b>Upper Cumberland Wetland (AMU)</b>					CY2021 Beginning Balance	80.159
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>		CY2021 Ending Balance	80.159
<b>Big Sandy Wetland (AMU)</b>					CY2021 Beginning Balance	93.439
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>	CY2021 Ending Balance	93.439
<b>Salt River Wetland (AMU)</b>	02/01/21	LRL-2020-963	1.300	61,500	CY2021 Beginning Balance	53.537
	05/28/21	LRL-2009-127	6.500	61,500	CY2021 Credit Sales	35.100
	07/22/21	LRL-2020-824	27.100	61,500	CY2021 Credit Releases	-
	10/27/21	LRL-2017-1046	0.200	61,500	CY2021 Ending Balance	18.437
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>35.100</b>		
<b>Green River Wetland (AMU)</b>	04/20/21	LRL-2019-443	1.100	61,500	CY2021 Beginning Balance	139.012
	05/18/21	LRL-2020-590	0.400	61,500	CY2021 Credit Sales	1.500
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>1.500</b>	CY2021 Ending Balance	137.512
<b>Jackson Purchase Wetland (AMU)</b>	2/10/2021	LRL-2019-887	4.700		CY2021 Beginning Balance	193.280
					CY2021 Credit Sales	4.700
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>4.700</b>	CY2021 Ending Balance	188.580
<b>Lower Licking Wetland (AMU)</b>	05/14/21	LRL-2021-0066	1.100	61,500	CY2021 Beginning Balance	97.420
	7/14/2021	LRL-2021-0355	0.900	61,500	CY2021 Credit Sales	2.400
	12/8/2021	LRL-2021-107	0.200	61,500	CY2021 Credit Releases	-
	12/27/2021	LRL-2020-408	0.200	61,500	CY2021 Ending Balance	95.020
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>2.400</b>		
<b>Lower Cumberland Wetland (AMU)</b>					CY2021 Beginning Balance	75.557
					CY2021 Credit Sales	-
					CY2021 Credit Releases	0.435
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>	CY2021 Ending Balance	75.992
<b>Lower Kentucky Wetland (AMU)</b>					CY2021 Beginning Balance	85.268
					CY2021 Credit Sales	-
					CY2021 Credit Releases	-
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>-</b>	CY2021 Ending Balance	85.268
<b>Northern Kentucky Wetland (AMU)</b>	01/25/21	LRL-2019-594	0.600	61,500	CY2021 Beginning Balance	67.000
	02/18/21	LRL-2019-371	0.200	61,500	CY2021 Credit Sales	2.100
	05/28/21	LRL-2020-800	0.600	61,500	CY2021 Credit Releases	-
	08/24/21	LRL-2019-452	0.400	61,500	CY2021 Ending Balance	64.900
	09/10/21	LRL-2021-177	0.300	61,500		
			<b>CY2021 TOTAL CREDITS SOLD</b>	<b>2.100</b>		

## Appendix B – Compliance and Long-Term Management Activities

### Long-Term Management Activities

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**Table 23. Long-Term Management Activities by Project**

Project Name	Service Area	Latitude	Longitude	Original Easement Holder	Current Easement Holder	Easement Description	Project Length/Area	Project Completion	Date Visited 2021	Easement Violations	Violation Description	Stream Instability	Instability Description
East Fork Little Sandy #1	Big Sandy	38.22028	-82.74722	Allen Holbrook, Kevin McCormick	Todd Case replaced Allen Holbrook	25 ft from normal flow edge of water	1522 linear feet	2010	2021-08-10	No		No	
East Fork Little Sandy #2	Big Sandy	38.21806	-82.74028	Carl Kirk, Jack Holcomb, Elmer Lucas, Bill Morehead, James Metz,	Todd Case replaced Allen Holbrook	EFLS: 50 ft from edge of water; Tribs; 25 ft from edge of water	9000 linear feet	2011	2021-08-10	No		No	
East Fork Little Sandy #3	Big Sandy	38.22333	-82.75139	Robert Baker, Elmer Lucas, Craig McNeil, Bill Johnson	Charles Mullet replaced Craig McNeil	EFLS: 25-35 ft from edge of water; Tribs: 15-25 ft from edge of water	7496 linear feet	2010	2021-08-10	No		No	
East Fork Little Sandy #4	Big Sandy	38.22081	-82.73278	Eugene Horton, Kevin McCormick		EFLS: 35-55 ft from centerline	3169 linear feet	2011	2021-08-11	No		No	
Left Fork Trace Creek	Big Sandy	38.33111	-82.74028	Ron and Stephanie Young		25 feet from restored stream bank	1300 linear feet	2008	2021-08-10	No		No	
Locust Creek	Big Sandy	38.02028	-82.89972	James Burton, William Green, Nannie Rigsby, Charles & Laura Bell, Kimberly & Dave Compton	Layfette Marcum replaced Charles & Laura Bell	Locust Creek: 50 ft from edge of water; Tribs; 15 ft from edge of water	1850 linear feet	2010	2021-08-10	No		No	
Middle Creek Stream Restoration	Big Sandy	37.65444	-82.80528	Middle Creek National Battlefield Foundation, Inc, Franklin Fitzpatrick Trustee		50 ft from edge of water. RDB of Middle Cr at DS end of project excluded	9230 linear feet	2008	2021-08-11	No		Yes	Minimal amount of erosion
Upper Laurel Creek	Big Sandy	38.01139	-82.88833	Garland Lyons, Thomas Fletcher		50 ft from edge of water. 30 ft from edge of water along road side	2700 linear feet	2009	2021-08-10	No		No	
Buck Creek - Pumphrey Tract	Lower Cumberland	37.1085	-84.41897	The Nature Conservancy		Entire property under TNC protection	62345 linear feet	2009	2021-08-18	No		No	
Cove Spring Stream and Wetland Restoration	Lower Kentucky	38.21885	-84.84748	City of Frankfort, HG Mays, KYTC		Width on site varies from 25ft at narrowest to 670 feet at widest	7203 linear feet, 20.92 acres	2013	2021-08-09	Yes	KYTC cut trees and discharged on the riparian zone. KYTC is resolving the issue.	No	
Elm Fork	Lower Kentucky	38.3609	-84.7525	KDFWR (Deed Restriction)		150 feet	8511 linear feet	2014	2021-08-09	No		No	
Mill Creek Elementary	Lower Kentucky	37.9744	-84.4878	Mill Creek Elementary School		Avg. of 45 ft outward from the centerline of the stream channel	680 linear feet	2009	2022-01-05	No		No	
Kinniconnick Creek	Lower Licking	38.48389	-83.37528	Jack Thomas, and Tom Esham		Jack Thomas 200ft on right bank 50 ft from toe of bank one side, Tom Esham 5,850; 25 from top of bank on Indian Creek; 25ft from toe on tribs	6050 linear feet	2005	2021-08-11	No		No	
South Fork Curry's Fork	Salt	38.36389	-85.38472	Oldham County School Board		DS of Bridge of toe of hill to road easement/ US of bridge 50ft each	4638 linear ft./ 1.33 acres	2012	2022-01-05	No		No	
Crane's Nest	Upper Cumberland	37.01017	-83.87247	Robin Rosential		average easement width 77 feet; 4 acres	2253 linear feet	2013	2021-08-18	No		No	
Balls Fork	Upper Kentucky	37.39528	-82.97556	Rudy Noble		25ft from constructed sides	750 linear feet	2007	2021-08-11	No		No	
Bullskin Creek	Upper Kentucky	37.22889	-83.51417	Ronnie Gay		30 feet either side of the Normal flow of the creeks edge	1825 linear feet	2006	2021-08-11	No		No	
Elisha Creek	Upper Kentucky	37.08529	-83.52642	USFS		Project is protected under USFS Management Plan	4227 linear feet	2013	2021-08-11	No		No	
Red Lick Creek	Upper Kentucky	37.58972	-84.07167	Sue and Emerson McAfee		50 ft from waters edge at Normal flow	1860 linear feet	2007	2021-08-18	Yes	The water district cleared a section next to the bridge. The water district has a preexisting easement.	Yes	100 to 150 ft of extensive erosion next to the bridge on the right descending bank
SECC Bank Stabilization	Upper Kentucky	37.12083	-82.82694	SECC		25 ft from construction side of Normal creek flow	825 linear feet	2006	2021-08-11	No		No	
Terry's Branch	Upper Kentucky	37.39194	-82.97389	Rudy Noble		50' from stream edge at Normal flow	3020 linear feet	2007	2021-08-11	No		No	
Slabcamp/Stonecoal Creek	Upper Licking	38.11556	-83.33972	USFS		Project is protected under USFS Management Plan	48819 linear feet	2013	2021-08-09	No		No	



***Table 24. Completed Maintenance Task List 2021***

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**Completed Maintenance Task List 2021**

<b>Project Name</b>	<b>Date</b>	<b>Staff</b>	<b>Action</b>	<b>Amount</b>	<b>Description</b>
Roger's Gap - Tributary B	1/5/2021	MB, TB	Construction	2 BDA/PALS*	Built structures in areas where the grade control failed and the stream was entrenched.
Roger's Gap - Tributary B	1/5/2021	MB, TB	Planting Live Stake	350 Stems	Planted in high stress areas to prevent future erosion or chute cut-offs.
Myer's Station	1/6/2021	MB, TB	Planting Live Stake	700 Stems	Planted in high stress areas that had erosion to prevent future erosion.
Red Oak - Tributary C	1/7/2021	MB, TB	Planting Live Stake	500 Stems	Planted in low stem count areas to prevent future erosion.
Old Trace Creek	1/12/2021	MB, TB	Planting Live Stake	500 Stems	Planted in high stress areas that had erosion to prevent future erosion.
Minors Station	1/14/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/15/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/19/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/20/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/22/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/25/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/28/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Minors Station	1/29/2021	MB, TB	Planting Live Stake	600 Stems	Planted areas on the floodplain that had erosion to prevent future erosion.
Ross Creek	2/2/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas with low stem counts in the wetlands to help boost our tree density.
Ross Creek	2/3/2021	MB, TB	Planting Live Stake	500 Stems	Planted areas with low stem counts in the wetlands to help boost our tree density.

Roger's Gap - Tributary D	2/25/2021	MB, TB	Planting Live Stake	600 Stems	Planted in high stress areas to prevent future erosion or chute cut-offs.
Roger's Gap - Tributary D	3/9/2021	MB, TB	Planting Live Stake	600 Stems	Planted in high stress areas to prevent future erosion or chute cut-offs.
Red Oak - Tributary C	3/17/2021	MB, TB	Planting Bare Root	700 Stems	Planted areas where the tree density was low to meet USACE vegetation standards.
Red Oak - Tributary C	3/18/2021	MB, TB	Planting Bare Root	700 Stems	Planted areas where the tree density was low to meet USACE vegetation standards.
Big Farm - Indian Creek	3/22/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/23/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/24/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/25/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/29/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/30/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	3/31/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Big Farm - Indian Creek	4/1/2021	MB, TB	Planting Bare Root	1,950 Stems	Planted a buffer around the fields surrounding the Big Farm Mitigation Site.
Red Oak - Tributary C	4/7/2021	MB, TB	Planting Bare Root	500 Stems	Planted areas where the tree density was low to meet USACE vegetation standards.
Myer's Station	4/12/2021	MB, TB	Invasive Treatment	47 Gallons**	Foliar sprayed 3% Glyphosate via backpack and 25 gallon sprayer in the riparian zone.
Roger's Gap - Tributary F	4/13/2021	MB	Invasive Treatment	12 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.

Roger's Gap - Tributary F	5/19/2021	MB, TB	Invasive Treatment	12 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Roger's Gap - Tributary B	5/20/2021	MB, TB	Construction	2 Tons	Enhanced rock riffle structures in areas where the grade control failed.
Roger's Gap - Tributary A	5/26/2021	MB, TB	Invasive Treatment	13 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Roger's Gap - Tributary A	6/1/2021	MB, TB	Invasive Treatment	40 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Roger's Gap - Tributary A	6/14/2021	MB, TB	Invasive Treatment	39 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
East Fork Indian Creek	6/23/2021	TB	Invasive Treatment	3 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Minors Creek	6/28/2021	MB, TB	Invasive Treatment	9 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Higginson & Henry WMA	7/8/2021	MB	Invasive Treatment	30 Gallons**	Foliar sprayed 3% Glyphosate via backpack and 25 gallon sprayer in the riparian zone.
Ross Creek	7/14/2021	MB	Invasive Treatment	55 Gallons**	Foliar sprayed 3% Glyphosate via backpack and 25 gallon sprayer in the riparian zone.
Bolts Fork	7/12/2021	MB	Invasive Treatment	12 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Old Trace Creek	7/20/2021	MB	Invasive Treatment	8 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Minors Creek	8/3/2021	MB	Invasive Treatment	3 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Minors Creek	8/4/2021	MB	Invasive Treatment	21 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Ross Creek	10/14/2021	MB	Invasive Treatment	38 Gallons**	Foliar sprayed 3% Glyphosate via backpack and 25 gallon sprayer in the riparian zone.
BDA/PALS* is referring to Beaver Dam Analogs and Post-Assisted Log Structures.					
Gallons** represents the amount of the diluted chemical used to treat the invasive species.					

Completed Initial Physical of Biological Improvement (IPBI)

***Table 25. Completed IPBI Task List 2021***

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**Completed IPBI Task List 2021**

<b>Project Name</b>	<b>Date</b>	<b>Staff</b>	<b>Action</b>	<b>Amount</b>	<b>Description</b>
Slabcamp Branch	4/19/2021	MB, TB	Invasive Treatment	50 Gallons**	Foliar sprayed 3% Glyphosate via a 25 gallon sprayer in adjacent areas to prevent spreading into the project.
Slabcamp Branch	4/20/2021	MB, TB	Invasive Treatment	53 Gallons**	Foliar sprayed 3% Glyphosate via a 25 gallon sprayer in adjacent areas to prevent spreading into the project.
Staggs Branch	5/25/2021	MB, TB	Invasive Treatment	215 Gallons**	Foliar Sprayed 3% herbicide out of boomless sprayers via tractor converting the surrounding areas to native grass fields.
Staggs Branch	6/4/2021	MB, TB	Invasive Treatment	12 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Pond Creek	9/2/2021	MB	Invasive Treatment	5 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Big Rivers WMA	9/8/2021	MB, TB	Invasive Treatment	5 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Ross Creek 3	9/9/2021	MB, TB	Invasive Treatment	6 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
York Tract	9/13/2021	MB	Invasive Treatment	2.5 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Morgan Co. Extension Office Wetland	9/14/2021	MB	Invasive Treatment	5 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Slabcamp Branch	9/23/2021	MB	Invasive Treatment	15 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
White's Creek	9/28/2021	MB	Invasive Treatment	15 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Morgan Co. Extension Office Wetland	9/29/2021	MB	Invasive Treatment	25 Gallons**	Foliar sprayed 3% Glyphosate via a 25 gallon sprayer in the riparian zone.

Burnett Branch	9/2021 thru 10/2021	KNP***	Native Grassland Conversion	~100 Acres	In preparation for foliar application of the area, the area was mowed to get the most effective treatment.
Rolling Fork WMA	10/5/2021	Cardno*	Invasive Treatment	28 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.
Rolling Fork WMA	10/5/2021	Cardno*	Invasive Treatment	.4 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Rolling Fork WMA	10/6/2021	Cardno*	Invasive Treatment	36 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.
Rolling Fork WMA	10/6/2021	Cardno*	Invasive Treatment	.45 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Otter Creek	10/8/2021	Cardno*	Invasive Treatment	35 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.
Bender Hollow	10/11/2021	Cardno*	Invasive Treatment	35 Gallons**	Foliar sprayed 3% Triclopr 3 via a 25 gallon and backpack sprayer in the riparian zone.
Bender Hollow	10/11/2021	Cardno*	Invasive Treatment	1.5 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Bender Hollow	10/12/2021	Cardno*	Invasive Treatment	45 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.
Bender Hollow	10/12/2021	Cardno*	Invasive Treatment	1.3 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Horse Mill	10/13/2021	Cardno*	Invasive Treatment	84 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.
Horse Mill	10/13/2021	Cardno*	Invasive Treatment	1 Gallon**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Horse Mill	10/14/2021	Cardno*	Invasive Treatment	12 Gallons**	Foliar sprayed 3% Triclopr 3 via a backpack sprayer in the riparian zone.

Horse Mill	10/14/2021	Cardno*	Invasive Treatment	2 Gallons**	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	10/18/2021	MB	Invasive Treatment	6 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Gabbard Branch	10/20/2021	Cardno*	Invasive Treatment	90 Gallons**	Foliar sprayed 3% Triclopr 3 via a 25 gallon and backpack sprayer in the riparian zone.
Gabbard Branch	10/20/2021	Cardno*	Invasive Treatment	.75 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	10/20/2021	MB	Invasive Treatment	9 Gallons**	Foliar sprayed 3% Glyphosate via backpack sprayer in the riparian zone.
Anderson Tract	11/12/2021	MB, AP	Invasive Treatment	1 Gallon**	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	11/17/2021	MB, AP	Invasive Treatment	1 Gallon**	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	11/19/2021	MB, AP, TV	Invasive Treatment	1.25 Gallons**	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	11/22/2021	MB, AP	Invasive Treatment	1 Gallon**	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Kaler Bottoms WMA	12/1/2021	MB, AP	Invasive Treatment	1 Gallon**	Cut stump treated a monoculture with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Anderson Tract	12/8/2021	MB, TV	Invasive Treatment	1.5 Gallon	Cut stump treated with 50% Glyphosate via chainsaw and backpack sprayer in the riparian zone.
Little Sexton's Creek	12/14/2021	Cardno	Invasive Treatment	1.1 Gallons**	Cut stump treated with 50% Triclopr 3 via chainsaw and backpack sprayer in the riparian zone.



Little Sexton's Creek	12/15/2021	Cardno*	Invasive Treatment	.9 Gallons**	Cut stump treated with 50% Triclopyr 3 via chainsaw and backpack sprayer in the riparian zone.
Big Lick Hollow	12/22/2021	MB, AP	Invasive Treatment	.5 Gallons**	Cut stump treated with 50% Glyphosate via weed eater and backpack sprayer in the riparian zone.
Broke Leg	12/22/2021	Cardno	Invasive Treatment	.5 Gallons**	Cut stump treated with 50% Triclopyr 3 via chainsaw and backpack sprayer in the riparian zone.
Cardno* Cardno is a KDFWR Contractor					
Gallons** represents the amount of the diluted chemical used to treat the invasive species.					
KNP*** Kentucky Nature Preserves is in Memorandum of Agreement with KDFWR					

## Appendix C – Approved Compensatory Mitigation Projects

**Table 26. List of Instrument Modifications for Approved Projects, by USACE District**

Table of Corps Approved Mitigation Projects: KDFWR Mitigation Program - Louisville LRL-2010-325							
PROJECT	COUNTY	SERVICE AREA	Instrument Mod. No.	404 PERMIT ID.NO.	404 PERMIT APPROVAL DATE	401 WQC ID. NO.	401 WQC APPROVAL DATE
ILF-KDFWR Elm Fork/Kleber WMA Stream Restoration Project (MOA)	Owen	Lower Kentucky River Service Area	2	LRL-2012-00263	02/12/13	2012-050-1	10/22/12
ILF-KDFWR Indian Creek Stream Restoration Project (MOA)	Menifee	Upper Kentucky River Service Area	3	LRL-2012-00273	07/09/13	2013-009-1	03/07/13
ILF-KDFWR Roger's Gap Stream Restoration Project (MOA)	Scott	Lower Kentucky River Service Area	4	LRL-2012-00134	12/04/13	2013-026-1	06/26/13
ILF-KDFWR Eagle Creek Tributaries Restoration Project (MOA & ILF-I)	Union	Green River Service Area	5	LRL-2012-00716	01/16/15	2014-18-1M	06/04/14
ILF-KDFWR Myer's Station Stream Restoration (ILF-I)	Nicholas	Lower Licking River Service Area	6	LRL-2012-00637	04/20/16	2016-004-1	01/15/16
ILF-KDFWR Old Trace Creek Restoration (ILF-I)	Lewis	Big Sandy River Service Area	7	LRL-2013-00336	02/13/17	2016-029-1	04/26/16
KDFWR ILF Instrument Full Modification (to add 9 counties/change SA)	All	9 County Region	8	LRL-2010-325		NA	
ILF-KDFWR Goose Creek Restoration (ILF-I)	Casey	Green River Service Area	9	LRL-2012-00646	03/23/17	2016-090-7	09/21/16
ILF-KDFWR Minor's Creek Restoration (ILF-I)	Owen, Franklin	Lower Kentucky River Service Area	10	LRL-2013-00091	05/22/17	2016-097-1	10/31/16
ILF-KDFWR Ross Creek Stream & Wetland Restoration Phase I & II (MOA & ILF-I)	Lee, Estill	Upper Kentucky River Service Area	11	LRL-2013-00143	10/26/17	2016-111-7R	09/25/17
ILF-KDFWR Red Oak Creek Restoration Project, Drainage C (ILF-I)	Owen	Lower Kentucky River Service Area	12	LRL-2014-00500	04/17/18	2017-091-1	12/18/17
ILF-KDFWR Big Farm Indian Creek Restoration Project (ILF-I)	Bath	Lower Licking River Service Area	13	LRL-2014-00209	05/30/19	2019-001-7	10/05/18
ILF-KDFWR-Whites Creek Stream Restoration Project (ILF-I)	Boyd	Big Sandy River Service Area	14	LRL-2012-634	10/18/21	2018-015-7MR3	03/05/18
Ed Mabry – Laurel Gorge WMA Stream Restoration Project	Elliott	Big Sandy River Service Area	15	LRL-2013-00858 LRL-2013-01013 LRL-2012-00478	05/14/20	2020-036-1M	06/14/21
Table of Corps Approved Mitigation Projects: KDFWR Mitigation Program - Nashville LRN-2011-00709							
PROJECT	COUNTY	SERVICE AREA	Instrument Mod. No.	404 PERMIT ID.NO.	404 PERMIT APPROVAL DATE	401 WQC ID. NO.	401 WQC APPROVAL DATE
Sinking Valley Preservation Project	Pulaski	Upper Cumberland	2	LRN-2012-00326	12/11/2013	n/a	n/a
Hatchery Creek Restoration Project	Russell	Lower Cumberland	3	LRN-2010-00444	7/25/2014	23-041-7M(3)	7/15/2014
Blue Spring Creek Stream Restoration Project	Trigg	Lower Cumberland	4	LRN-2013-00776	4/23/2019	2015-092-1R	1/3/2019
Table of Corps Approved Mitigation Projects: KDFWR Mitigation Program - Memphis MVM-2013-95							
PROJECT	COUNTY	SERVICE AREA	Instrument Mod. No.	404 PERMIT ID.NO.	404 PERMIT APPROVAL DATE	401 WQC ID. NO.	401 WQC APPROVAL DATE
Obion II	Hickman	Jackson Purchase	1	MVM-2010-074	4/29/2014	2010-027-1	3/23/2010