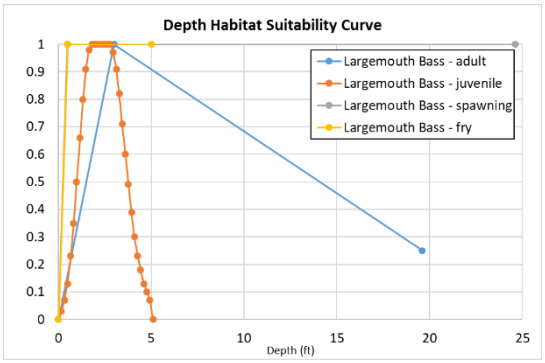
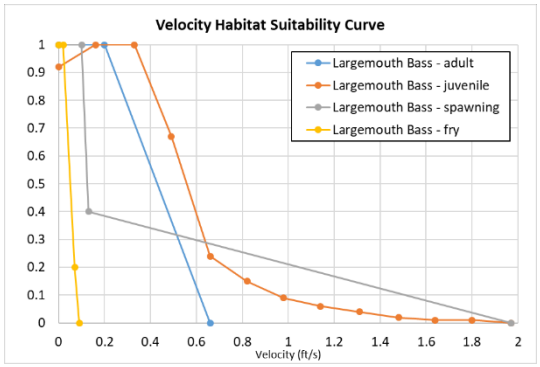
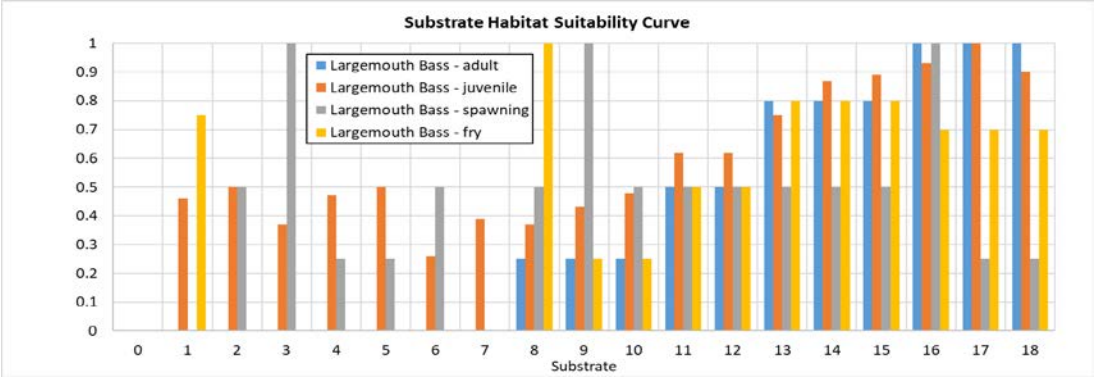
LARGEMOUTH BASS (ADULT/JUVENILE/SPAWNING/FRY)
MICROPTERUS SALMOIDES

Physical Habitat





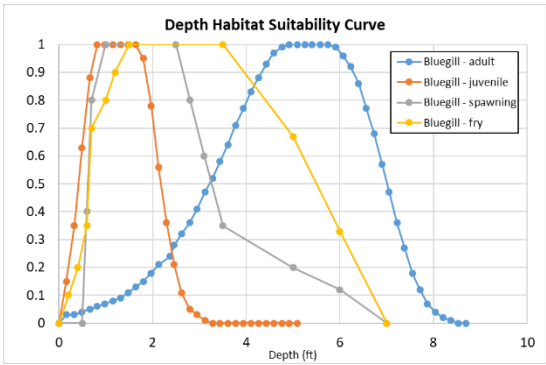


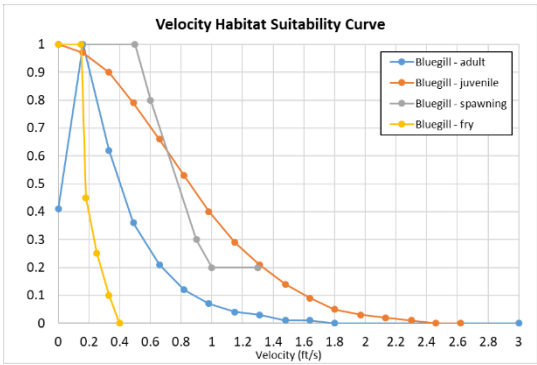
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

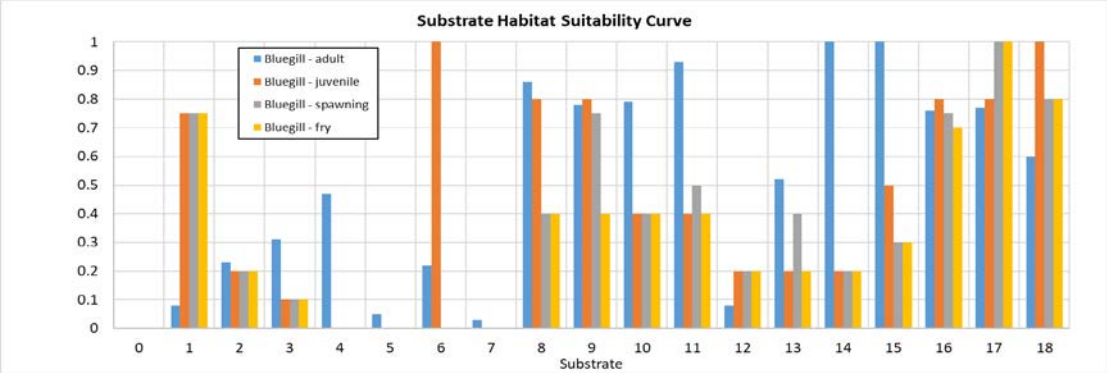
Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

BLUEGILL (ADULT/JUVENILE/SPAWNING/FRY)
LEPOMIS MACROCHIRUS

Physical Habitat





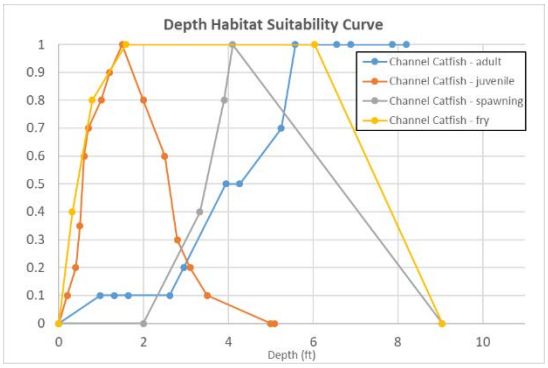


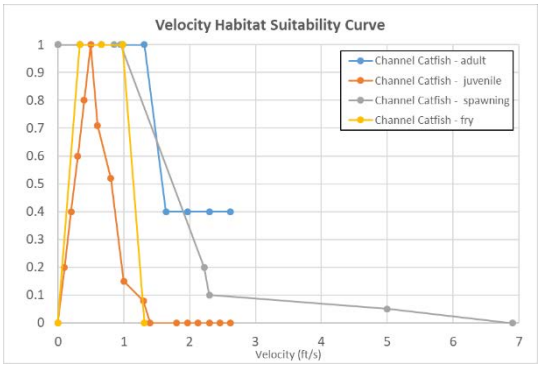
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

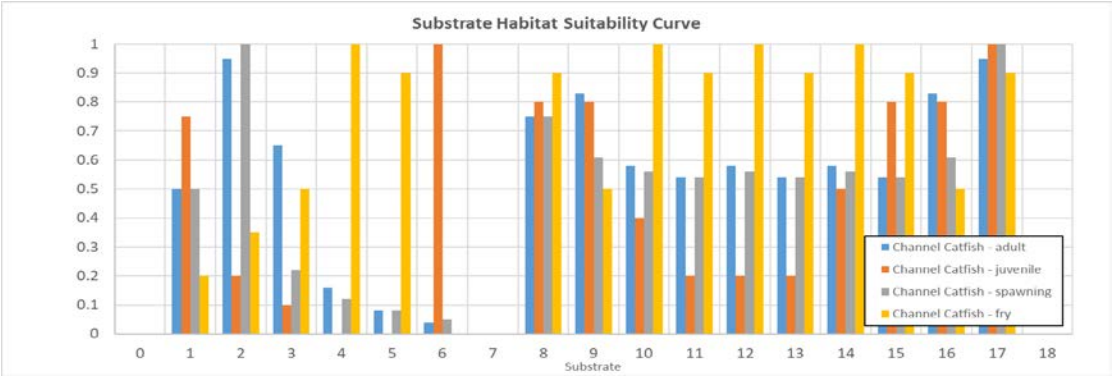
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

CHANNEL CATFISH (ADULT/JUVENILE/SPAWNING/FRY)
ICTALURUS PUNCTATUS

Physical Habitat





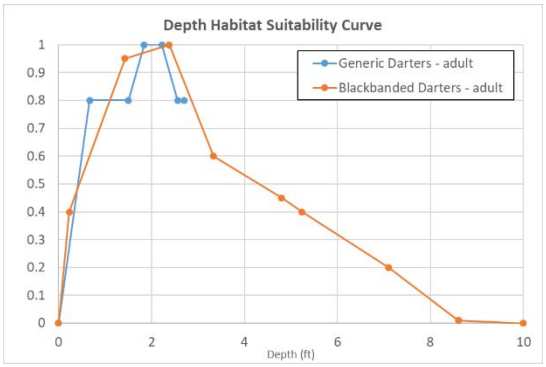


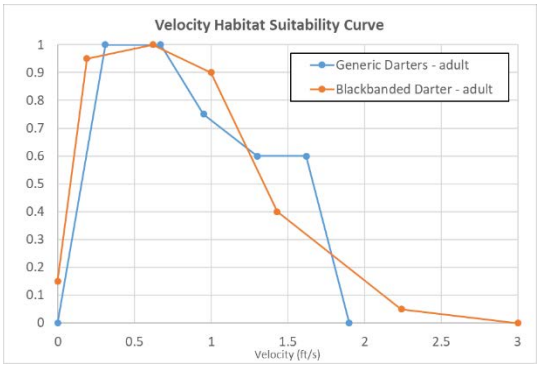
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

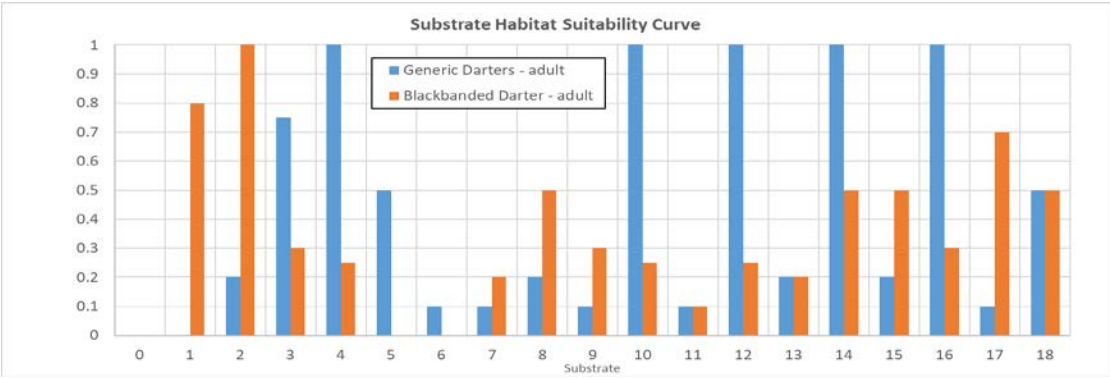
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

DARTERS (GENERIC/BLACKBANDED)
PERCINA NIGROFASCIATA

Physical Habitat





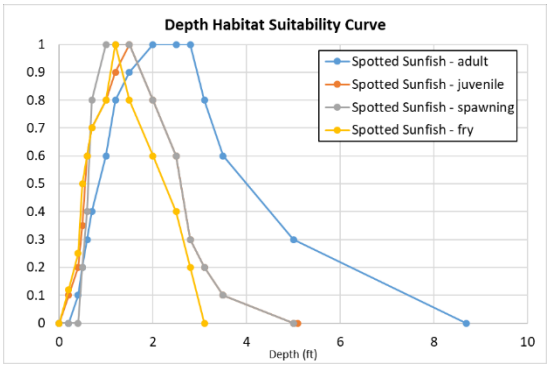


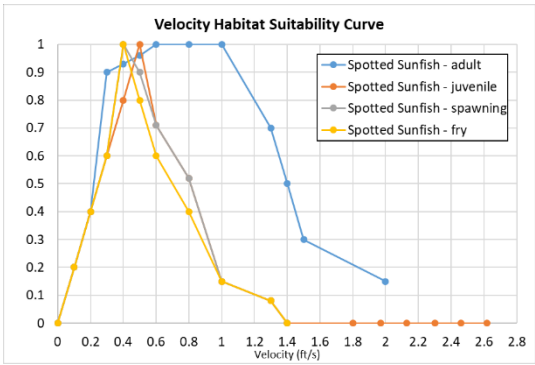
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

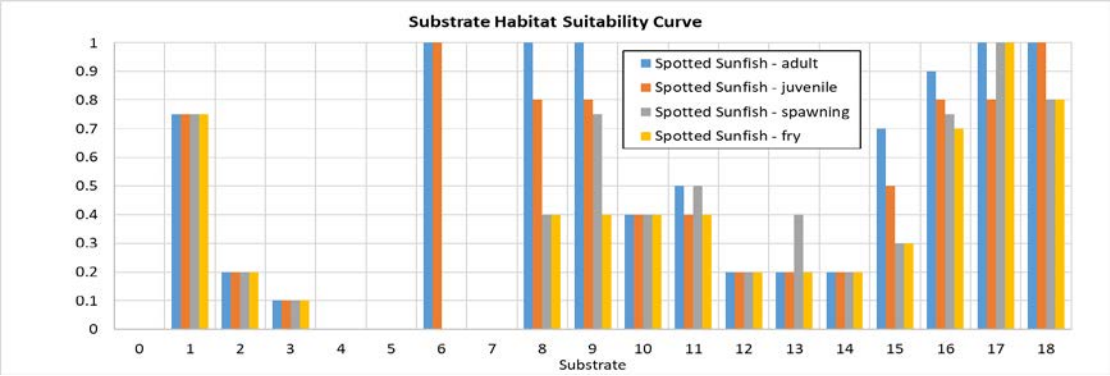
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

SPOTTED SUNFISH (ADULT/JUVENILE/SPAWNING/FRY)
LEPOMIS PUNCTATUS

Physical Habitat



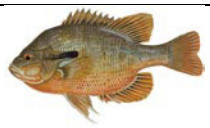




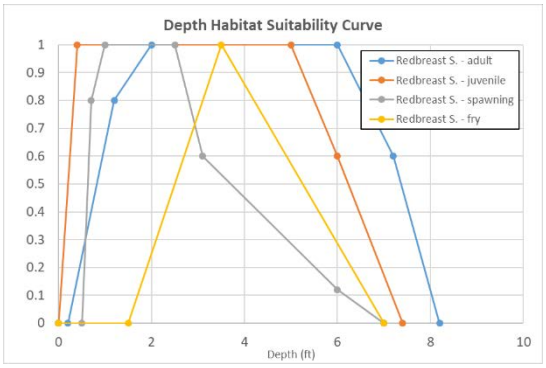
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

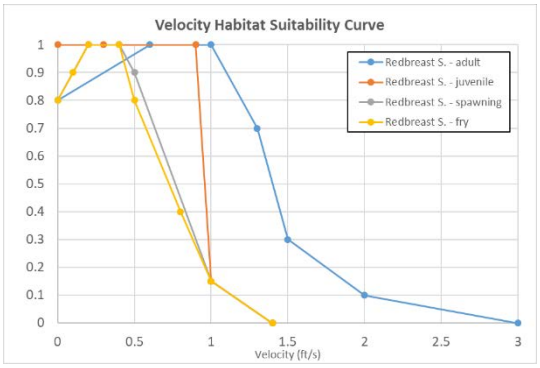
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

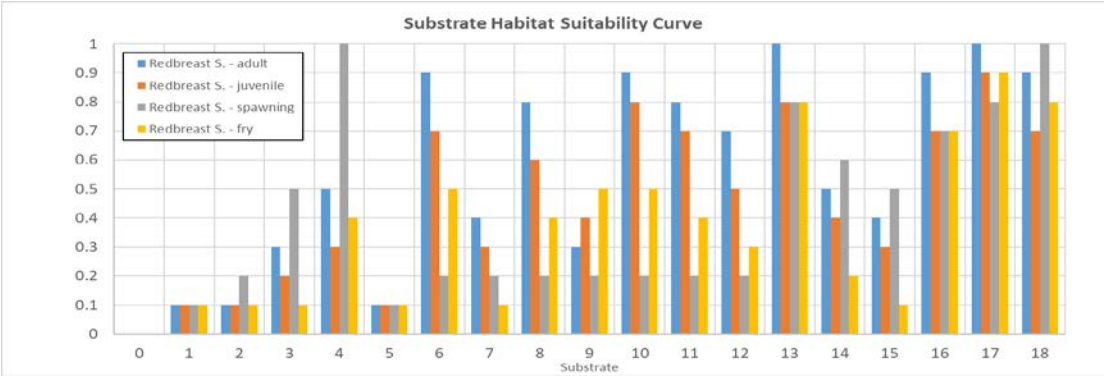
REDBREAST SUNFISH (ADULT/JUVENILE/SPAWNING/FRY)
LEPOMIS AURITUS



Physical Habitat





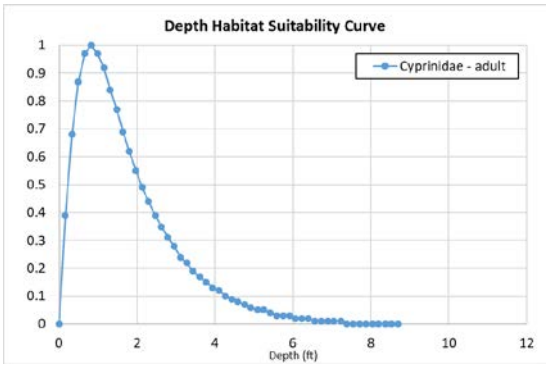


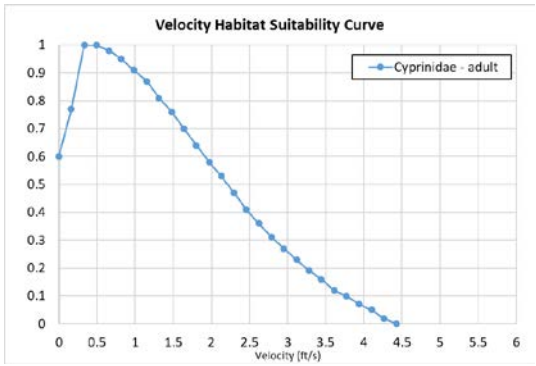
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

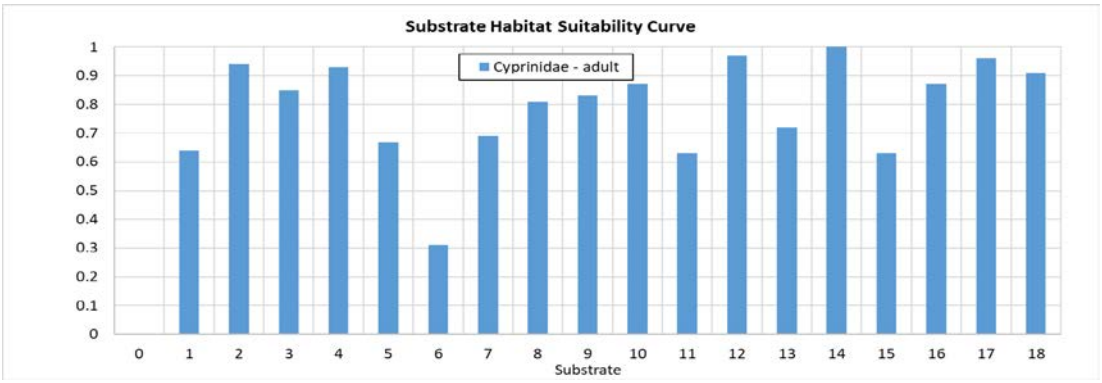
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

CYPRINIDAE – ADULT

Physical Habitat





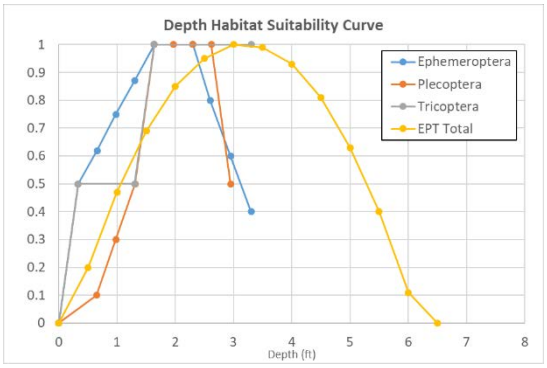


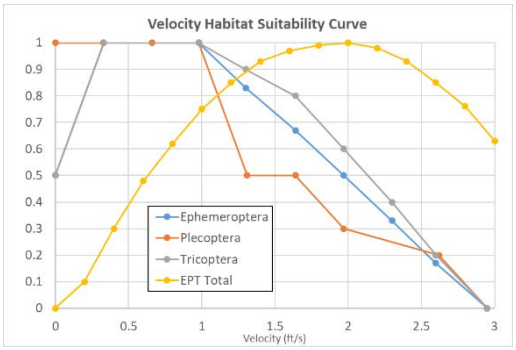
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

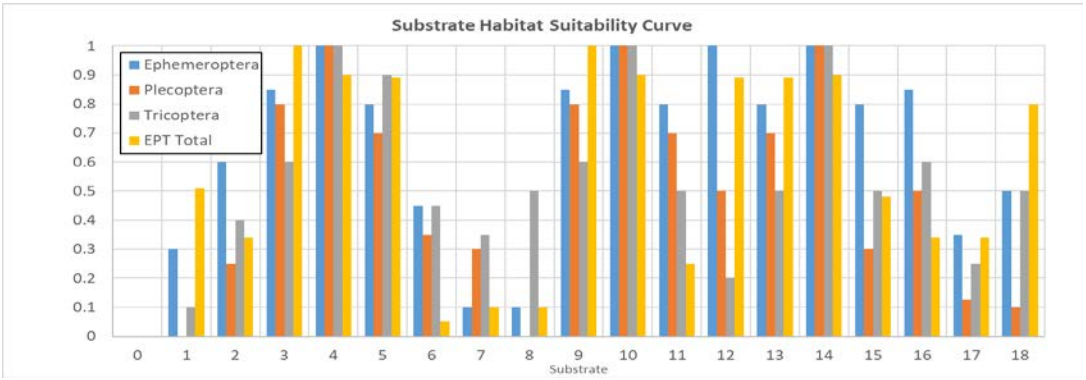
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

EPHEMEROPTERA / PLECOPTERA / TRICHOPTERA / EPT TOTAL
BENTHIC MACROINVERTEBRATE COMMUNITY

Physical Habitat







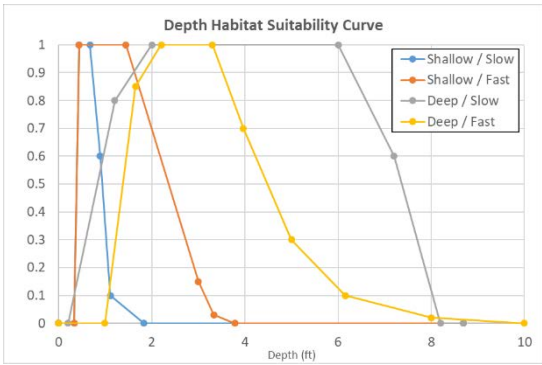
Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

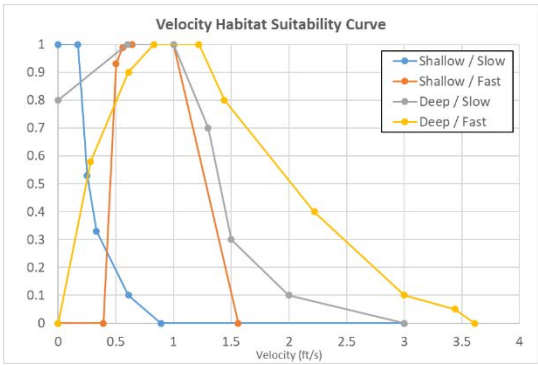
HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore

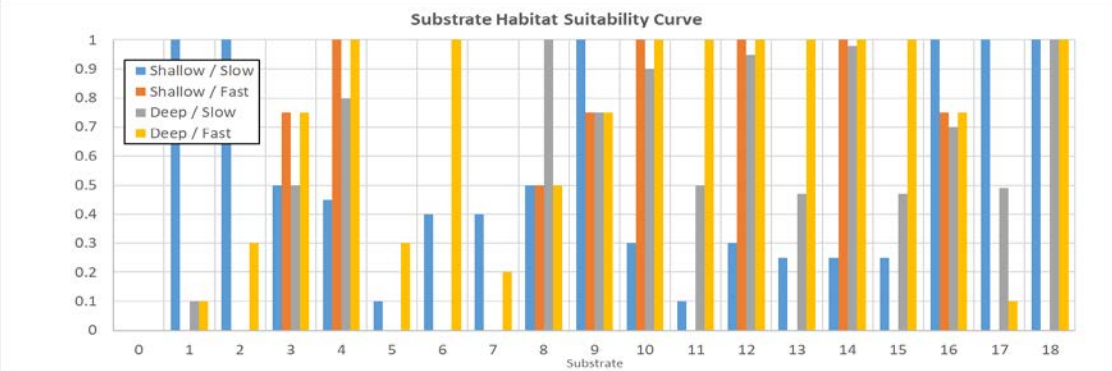
HSW Engineering, Inc.

HABITAT GUILDS
(SHALLOW SLOW / SHALLOW FAST / DEEP SLOW / DEEP FAST)

Physical Habitat







Substrate Coding			
1	No cover and silt or terrestrial vegetation	10	Overhead vegetation and cobble
2	No cover and sand	11	Overhead vegetation and small boulder, boulder, angled bedrock, or woody debris
3	No cover and gravel	12	Instream cover and cobble
4	No cover and cobble	13	Instream cover and small boulder, boulder, angles bedrock, or woody debris
5	No cover and small boulder	14	Proximal instream cover and cobble
6	No cover and boulder, angles bedrock or woody debris	15	Proximal instream cover and small boulder, boulder, angles bedrock, or woody debris
7	No cover and mud or flat bedrock	16	Instream cover or proximal instream cover and gravel
8	Overhead vegetation and terrestrial vegetation	17	Overhead vegetation or instream cover or proximal instream cover and silt or sand
9	Overhead vegetation and gravel	18	Aquatic vegetation - macrophytes

HSCs Source: USFWS "Bluebook" series (1970s,1980s) with habitat values modified by Dr. J. Gore