Growth and survival of hatchery-produced Atlantic sturgeon released into the Hudson River, New York

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New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

U.S. FISH & WILDLIFE SERVICE

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FEE: NONE

New York State Department of Environmental Conservation
Division of Fish and Wildlife
50 Wolf Road, Albany, New York 12233-4753

FISH STOCKING PERMIT

Last Name U.S. FISH & WILDLIFE SERVICE	First Name	M.I.	LICENSE NUMBER
Street Address NORTHEAST FISHERIES CENTER PO BOX 75			EFFECTIVE DATE 10/17/94
City/TOWN LAMAR	State PA	Zip 16848	EXPIRATION DATE 12/31/94
County of Residence	Telephone 717-726-4247		REGION 3

PERMIT CONDITIONS

1. The permittee and his or her designated agents may only stock live fish or fish eggs into the following approved water/s:
   HUDSON RIVER

2. The permittee and his or her designated agents may only stock the following species of live fish or fish eggs into the water/s identified in Section 1 above:
   ATLANTIC STURGEON

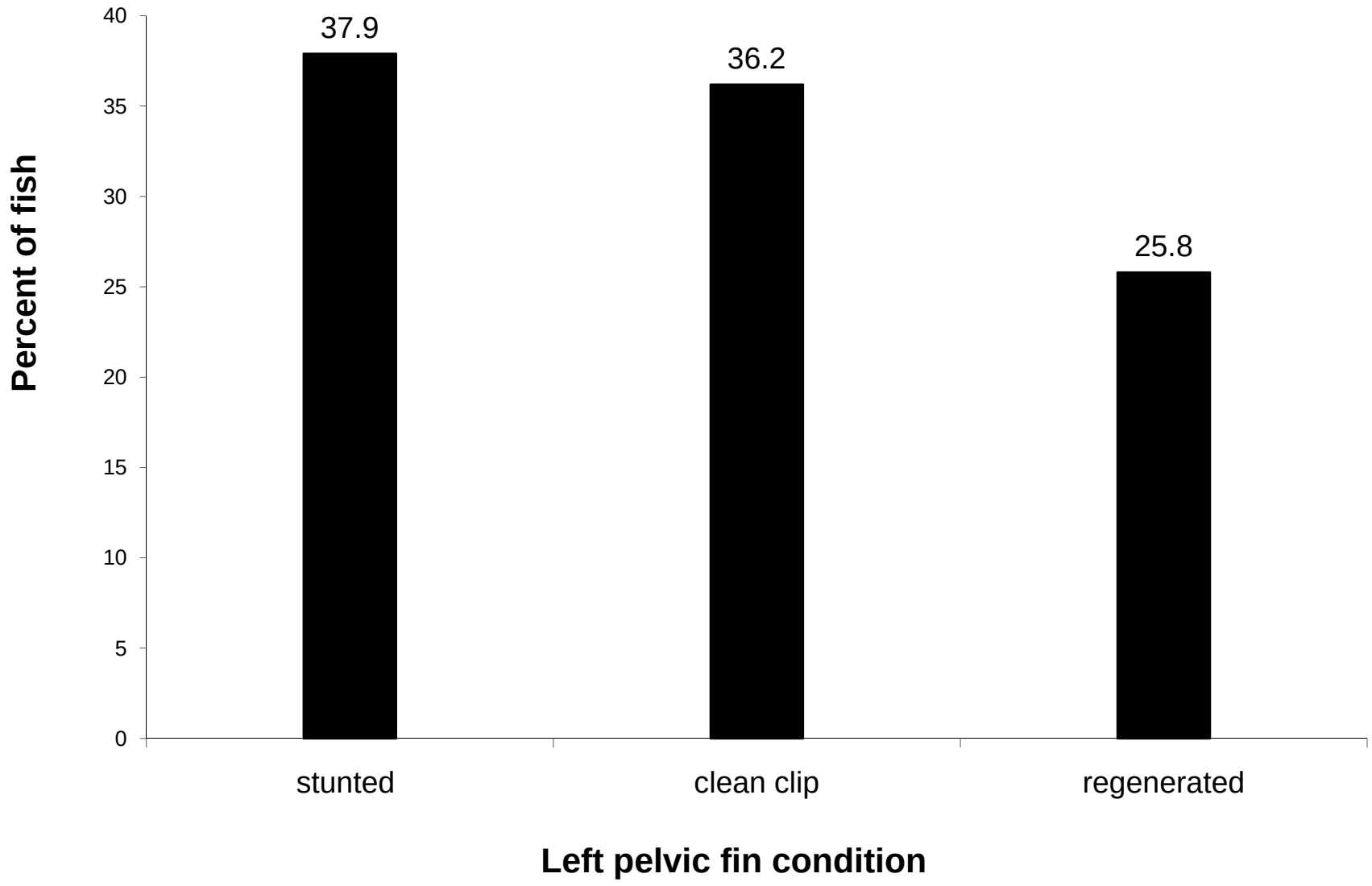
3. Additional Conditions:
   ALL FISH WILL BE MARKED WITH A CODED WIRE TAG (CWT) TO ALLOW FOR FUTURE IDENTIFICATION AS BEING OF HATCHERY ORIGIN.

Wayne R. Elliot
Regional Fisheries Manager

Date: 10/17/94

cc: Law Enforcement ☐
Inland Fisheries Section ☐
Fish Culture Section ☐
Others _____ ☐

Condition of left pelvic fin clip in 1994 year-class
Atlantic sturgeon at 49d post-clip



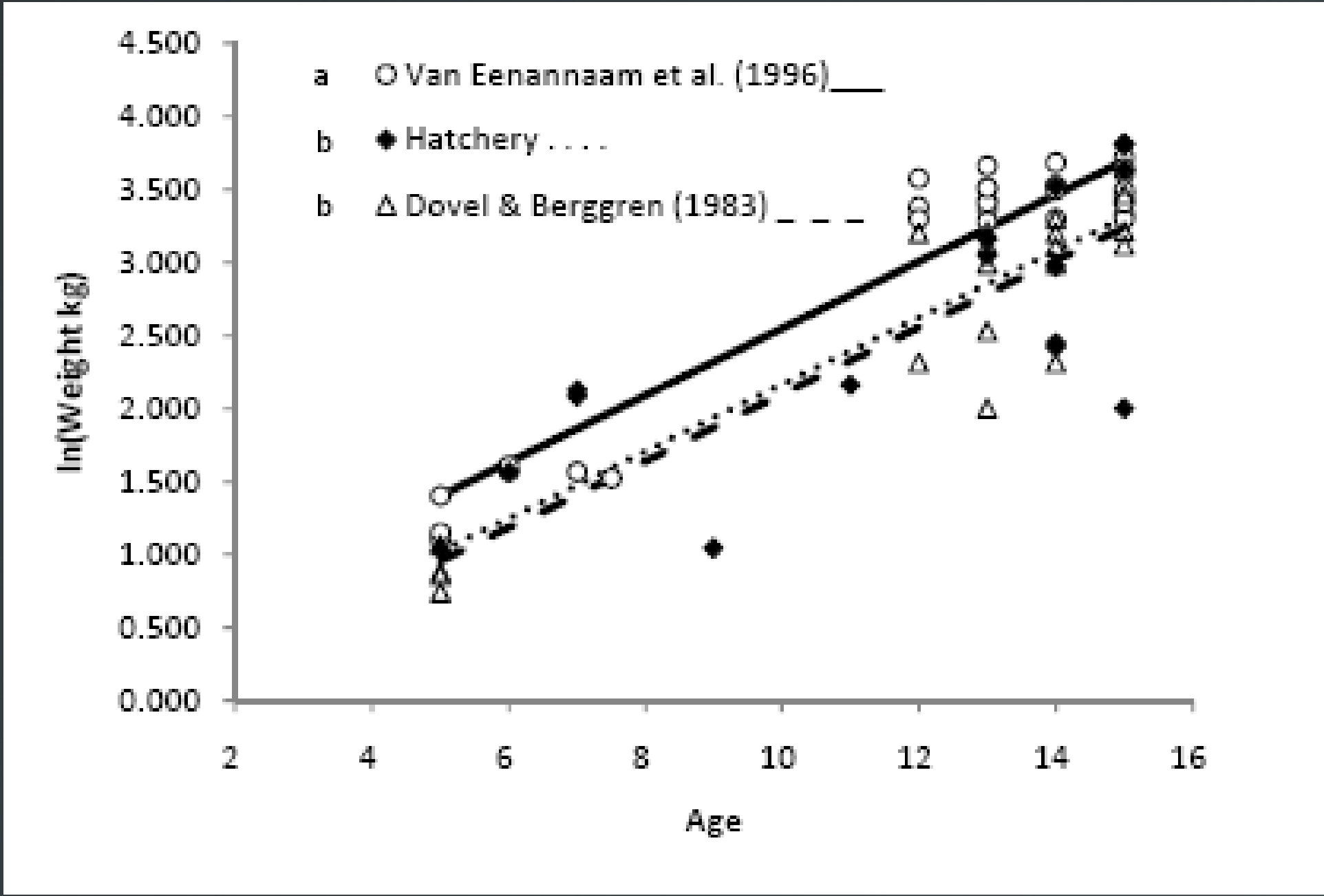
Growth comparisons

Age 5 – 15 stocked recaptures from Database
N=19

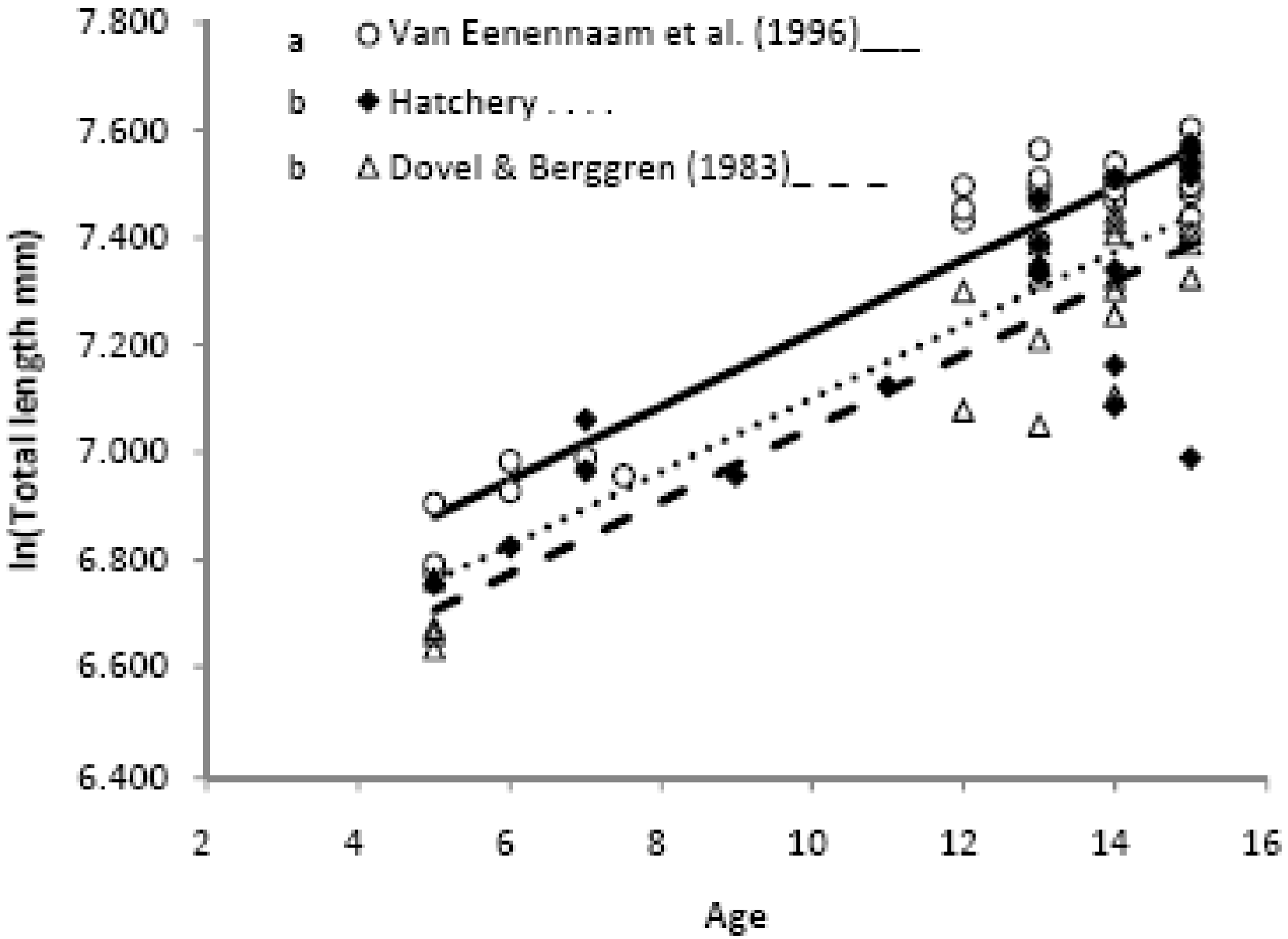
Compared to : Equivalent aged wild fish from the Hudson River

Van Eenennaam et al. (1996) and Dovel and Berggren (1983)
N=30 N=21

Weight at age



Length at age



Contribution to the target population

Hudson River spawning season – 2009
45 kg

2009 Hudson R.
Milt extraction from 1994 hatchery released fish

Resulting considerations

- Documented survival shows that ASN reared on artificial diet prior to release (about 70 / 118 days) successfully converted to natural food once liberated and exhibited growth equivalent to their wild counterparts from ages 5 – 15 years.

- Despite a possible high degree of fin regeneration, the pelvic fin clip was a critical factor in identifying hatchery fish. But, advances in PIT tag technology could replace much of the need for an external mark. CWT are not suitable for ASN.

- Even though reared in hatchery water of the Chesapeake basin for 118d, the capture of an age15 spermiating male in the Hudson along with spermiating wild males at a well-known spawning area suggests three possibilities:

    1) that imprinting took place after release
        118 d post hatch ; av. size = 104 mm, 4.1 g
    2) that imprinting was genetically hard-wired
    3) that it was a random straying event

Resulting considerations, continued

- The age of maturity (15 years) for the captured, spermiating male is consistent with that of the majority of wild Hudson males (13-16 years) reported in Van Eenennaam et al. (1996)

- The Atlantic coastal tagging database is an important tool for sturgeon management and restoration

Thanks to Sheila Eyler –USFWS and all researchers who contributed information to the database

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