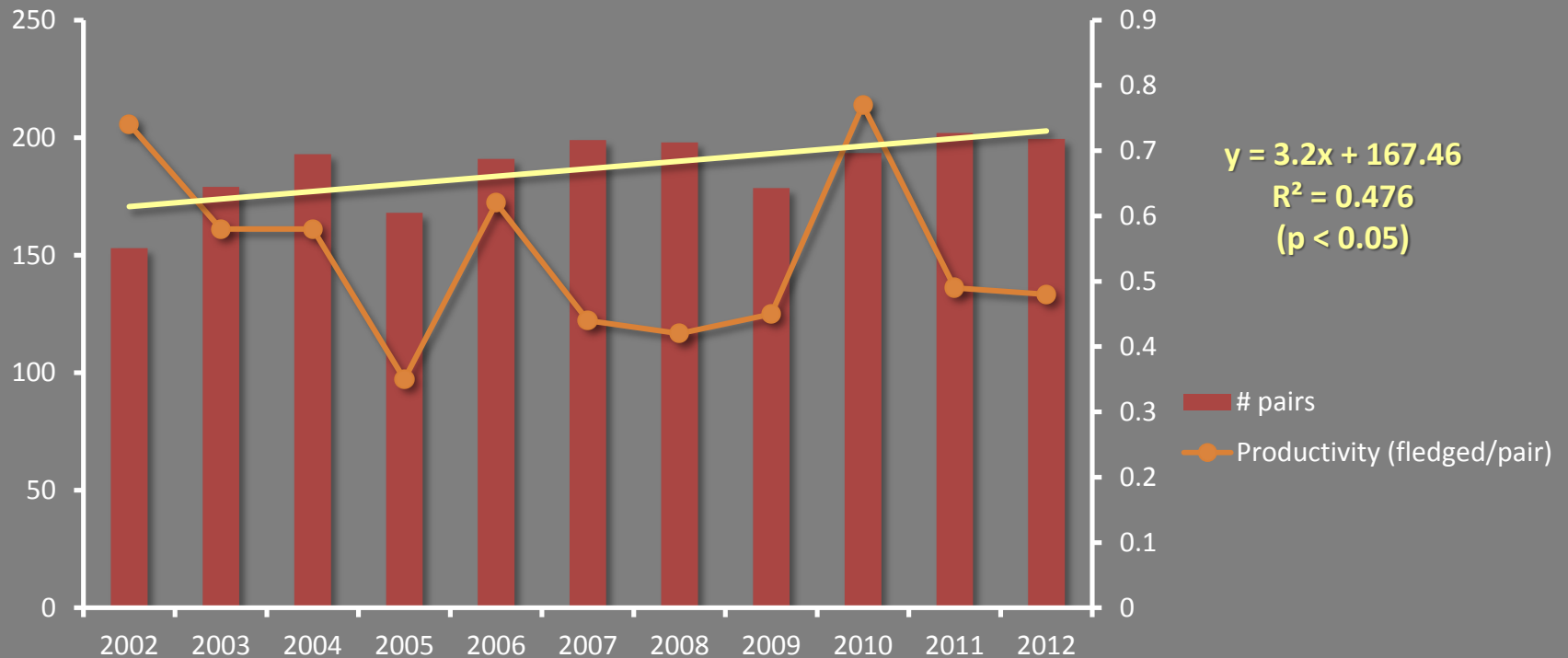




MASSACHUSETTS BREEDING POPULATION





MASSACHUSETTS BANDED POPULATION

- Established, marked population in core areas of state
- Due to high rates of recruitment, we're now focusing on juvenile banding
- *A closer look at recruitment ...*

	05	06	07	08	09	10	11	Total
JUV.	2	17	23	8	24	57	36	167
AD.	33	40	35	31	27	43	12	221
TOTAL	35	57	58	39	51	100	48	388
% OF POP'N BANDED	14	20	22	30	29	39	35	

**MA partners
began to receive
NFWF funding**





CHICKS RETURNING

- 167 chicks banded
- 25 (15%) returned to MA during breeding season (Apr-Aug)
 - *Returning does not assume breeding*
- Age of returning = 3.47 years (range 2-5)
- Still early to detect an elevated level of recruitment from NFWF management efforts (2009-current)

Year	Newly banded chicks	Percent recruited from cohort
2005	2	0.50 (1)
2006	17	0.53 (9)
2007	23	0.48 (11)
2008	8	0.25 (2)
2009	24	0.08 (2)
2010	57	0
2011	36	0





***PRELIMINARY* ... JUVENILE SURVIVAL**

- CJS time-since-marking (2,3,4) models add an “age” effect and have been shown to be important in other shorebird species
- **Best fit model:**

Apparent survival (ϕ) with two stage-classes (2ac)

Recapture rate (p) with four stage-classes (4ac)

Model	AICc	Delta AICc	AICc Weights	Model Likelihood	K	Dev.
Phi(2ac), p(4ac)	198.8	0.0	0.85	1.00	6	29.74
Phi(2ac), p(2ac)	202.2	3.4	0.15	0.18	4	37.43
Phi(2ac), p(.)	243.7	44.8	0.00	0.00	2	83.02
Phi(t), p(t)	259.2	60.4	0.00	0.00	6	90.13

- Next best model *phi(2ac), p(2ac)* had 3.4 Δ AIC value

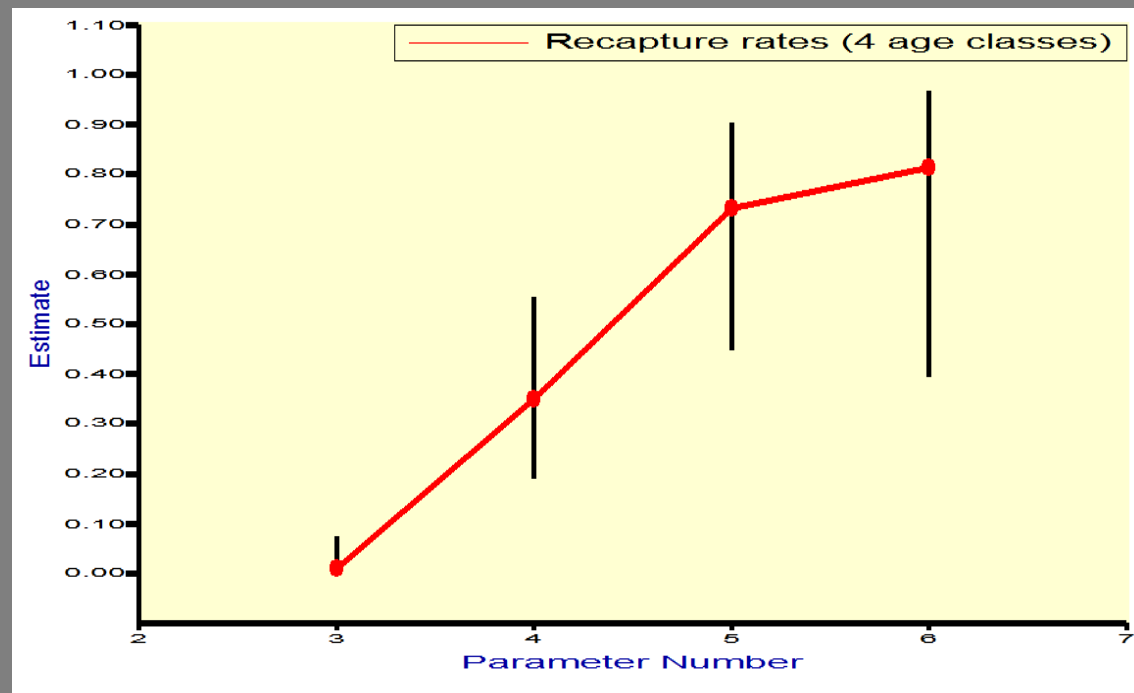




CHICKS SURVIVING & RETURNING

- Apparent survival_{1ac} = 0.76
- Apparent survival_{2ac} = 0.72
- Recapture rate: 0.01 – 0.81
 - Large range is an indication of chicks temporarily emigrating for 3-4 years.

Label	Estimate	SE	LCI	UCI
Phi1	0.76	0.217	0.24	0.97
Phi2	0.72	0.094	0.51	0.87
p1	0.01	0.010	0.00	0.07
p2	0.35	0.097	0.19	0.55
p3	0.73	0.122	0.45	0.90
p4	0.81	0.148	0.39	0.97



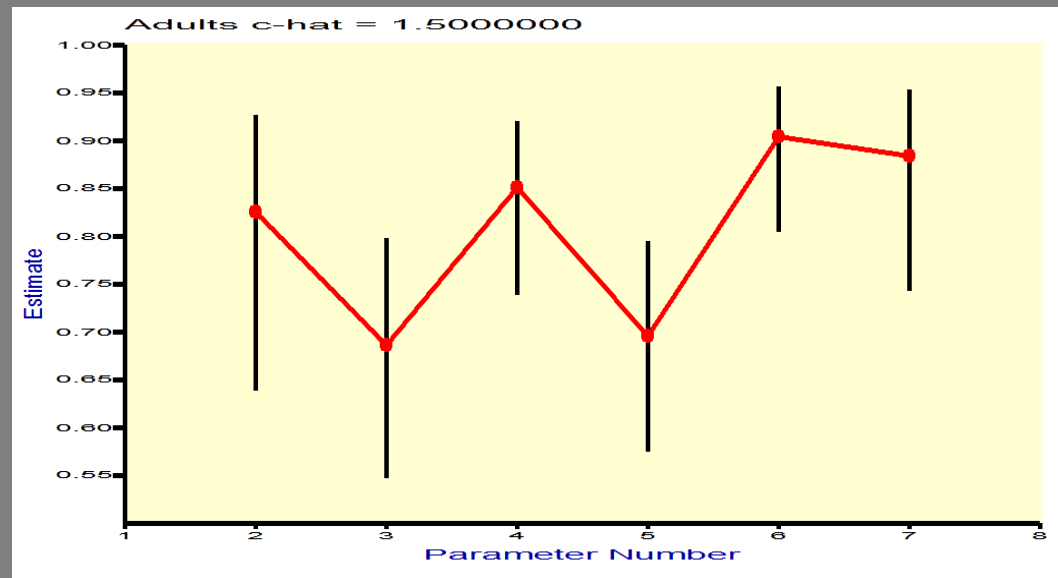


PRELIMINARY ADULT SURVIVAL

Best fit model:

- Constant apparent survival (ϕ)
- Time-dependent recapture rates (p)
- Apparent survival (0.88) similar to survival estimates of AMOY in Nol et al. 2012, Davis 1999)
- Recapture rates show improvement since NFWF support ... *resources are able to monitor more efficiently and cover more areas*

	Estimate	SE	LCI	UCI
Phi	0.88	0.018	0.84	0.91
p2006	0.83	0.072	0.64	0.93
p2007	0.69	0.065	0.55	0.80
p2008	0.85	0.046	0.74	0.92
p2009	0.70	0.057	0.57	0.79
p2010	0.90	0.037	0.80	0.96
p2011	0.88	0.051	0.74	0.95





CONCLUSIONS

- These estimates were completed less than 24-hrs ago ... they are preliminary and uncooked ... *final compilation of these data will be occurring over the next few weeks, including covariate analyses.*
- In MA, chicks appear to be returning to the breeding population between years three and four ... *including our resights from other states will strengthen this estimate.*
- MA adult apparent survival appears in line with other AMOY estimates ... *next step is to also include winter resights.*
- NFWF has supported Massachusetts since 2009, resulting in:
 - *Marked population to track effects of management on populations*
 - *More efficient monitoring and reporting*

*Send questions and complaints to
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