Model (Red means implemented in RMark)	Code	RMark Example	Parameters
Live Recaptures (CJS)	Live	?dipper; ?example.data	Phi p
Dead Recoveries	Dead		S r
Both Live and Dead Encounters -- Burnham	Both		S p r F
Known Fate	Known	?Blackduck	S
Closed Population Estimation	Closed	?edwards.eberhardt	p c N
BTO Dead Recoveries and Unknown Ringings	BTO		S
Robust Design with Closed Population Estimation	Robust	?robust	S Gamma'' Gamma' p c N
Both Live and Dead Encounters -- Barker	Barker		S p r R R' F F'
Multi-state with Live Recaptures	Multistrata		S p Psi
Brownie et al. Dead Recoveries	Brownie		S f
Jolly-Seber Lambda -- Burnham	Jolly		Phi p Lambda N
Huggins Closed Population Estimation	Huggins	?edwards.eberhardt	p c
Robust Design with Huggins' Estimator	RDHuggins	?robust	S Gamma'' Gamma' p c
Pradel Recruitment Only	Pradel		Gamma p
Pradel Survival and Seniority	PradSen		Phi p Gamma
Pradel Survival and Lambda	PradLambda		Phi p Lambda
Pradel Survival and Recruitment	PradRec		Phi p f
Barker Live and Dead with Closed Robust Design	RDBarker		S r R R' Gamma'' Gamma' F p c N
POPAN	POPAN	?dipper	Phi p pent N
Virtual Population Analysis (VPA)	VPA		M F
Multi-state with Live and Dead Encounters	MSLiveDead		S p Psi r
Closed Captures with Heterogeneity	HetClosed	?edwards.eberhardt	pi p N
Full Closed Captures with Heterogeneity	FullHet	?edwards.eberhardt	pi p c N
Nest Success	Nest	?killdeer; ?mallard	S
Huggins' Closed Captures with Heterogeneity	HugHet	?edwards.eberhardt	pi p
Huggins' Full Closed Captures with Heterogeneity	HugFullHet	?edwards.eberhardt	pi p c
Occupancy Estimation with Detection < 1	Occupancy	?salamander; ?weta	p Psi
RD Occupancy Estimation with psi, epsilon.	RDOccupPE	?RDSalamander	Psi Epsilon p
RD Occupancy Estimation with psi, gamma.	RDOccupPG	?RDOccupancy; ?RDSalamander	Psi Gamma p
RD Occupancy Estimation with psi(1), gamma, epsilon.	RDOccupEG	?RDSalamander	Psi Epsilon Gamma p
Link-Barker Jolly-Seber	LinkBarker		Phi p f
Open Robust Design Multi-state	ORDMS		S Psi pent Phi p
Closed Robust Design Multi-state	CRDMS	?crdms	S Psi p c N
Huggins' Closed Robust Design Multi-state	HCRDMS		S Psi p c
Heterogeneity Closed Robust Design Multi-state	HetRDMS		S Psi pi p N
Full Heterogeneity Closed Robust Design Multi-state	FHetRDMS		S Psi pi p c N
Huggins' Het. Closed Robust Design Multi-state	HHetRDMS		S Psi pi p
Huggins' Full Het. Closed Robust Design Multi-state	HFHetRDMS		S Psi pi p c
Robust Design with Heterogeneity Estimator	RDHet	?robust	S Gamma'' Gamma' pi p N
Robust Design with Full Heterogeneity Estimator	RDFullHet		S Gamma'' Gamma' pi p c N
Robust Design with Huggins' Het. Estimator	RDHHet		S Gamma'' Gamma' pi p
Robust Design with Huggins' Full Het. Estimator	RDHFHet		S Gamma'' Gamma' pi p c
Barker Live and Dead with Huggins' Robust Design	RDBarkHug		S r R R' Gamma'' Gamma' F p c
Barker Live and Dead with Heterogeneity Robust Design	RDBarkHet		S r R R' Gamma'' Gamma' F pi p N
Barker Live and Dead with Full Het. Robust Design	RDBarkFHet		S r R R' Gamma'' Gamma' F pi p c N
Barker Live and Dead with Huggins' Het. Robust Design	RDBarkHHet		S r R R' Gamma'' Gamma' F pi p
Barker Live and Dead with Huggins' Full Het. Robust Design	RDBarkHFHet		S r R R' Gamma'' Gamma' F pi p c
Lukacs Young Survival from Marked Adults	LYSMA		Phi p
Robust Design Pradel Seniority Closed Population Estimation	RDPdGClosed		Phi Gamma p c N
Robust Design Pradel Seniority Huggins' Closed Populations	RDPdGHuggins		Phi Gamma p c
Robust Design Pradel Seniority Closed Captures with Heterogeneity	RDPdGHet		Phi Gamma pi p N
Robust Design Pradel Seniority Full Closed Captures with Het.	RDPdGFullHet		Phi Gamma pi p c N
Robust Design Pradel Seniority Huggins' Closed Captures with Het.	RDPdGHugHet		Phi Gamma pi p
Robust Design Pradel Seniority Huggins' Full Closed Captures with Het.	RDPdGHugFullHet		Phi Gamma pi p c
Robust Design Pradel Lambda Closed Population Estimation	RDPdLClosed		Phi Lambda p c N
Robust Design Pradel Lambda Huggins' Closed Populations	RDPdLHuggins		Phi Lambda p c
Robust Design Pradel Lambda Closed Captures with Heterogeneity	RDPdLHet		Phi Lambda pi p N
Robust Design Pradel Lambda Full Closed Captures with Het.	RDPdLFullHet		Phi Lambda pi p c N
Robust Design Pradel Lambda Huggins' Closed Captures with Het.	RDPdLHugHet		Phi Lambda pi p
Robust Design Pradel Lambda Huggins' Full Closed Captures with Het.	RDPdLHugFullHet		Phi Lambda pi p c
Robust Design Pradel Recruitment Closed Population Estimation	RDPdfClosed		Phi f p c N
Robust Design Pradel Recruitment Huggins' Closed Populations	RDPdfHuggins		Phi f p c
Robust Design Pradel Recruitment Closed Captures with Heterogeneity	RDPdfHet		Phi f pi p N
Robust Design Pradel Recruitment Full Closed Captures with Het.	RDPdfFullHet		Phi f pi p c N
Robust Design Pradel Recruitment Huggins' Closed Captures with Het.	RDPdfHugHet		Phi f pi p
Robust Design Pradel Recruitment Huggins' Full Closed Captures with Het.	RDPdfHugFullHet		Phi f pi p c
Open Robust Design Pradel Multi-state	ORDPdMS		S Psi Gamma pent Phi p
Huggins Closed Robust Design Multi-state with State Probabilities	CRDMSOHug		S Psi Omega p c
Huggins Heterogeneity Closed Robust Design Multi-state with State Probabilities	CRDMSOHet		S Psi Omega pi p
Huggins Full Heterogeneity Closed Robust Design Multi-state with State Probabilities	CRDMSOFHet		S Psi Omega pi p c
Occupancy Heterogeneity Estimation with Detection < 1	OccupHet	?salamander	pi p Psi

Description	Code	Help								
RD Occupancy Heterogeneity Estimation with psi, epsilon	RDOccupHetPE		Psi	Epsilon	pi	p				
RD Occupancy Heterogeneity Estimation with psi, gamma	RDOccupHetPG		Psi	Gamma	pi	p				
RD Occupancy Heterogeneity Estimation with psi(1), gamma, epsilon	RDOccupHetEG		Psi	Epsilon	Gamma	pi	p			
Occupancy Estimation Royle/Nichols Poisson Abundance	OccupRNPoisson	?Donovan.7	r	Lambda						
Occupancy Estimation Royle/Nichols Negative Binomial Abundance	OccupRNNegBin	?Donovan.7	r	Lambda	VarAdd					
Two species Occupancy Estimation	2SpecOccup		PsiAB	PsiA	PsiB	pA	pB	rAB	rAb	raB
Logit-Normal Mark Resight	LogitNormalMR	?LogitNormalMR	p	sigma	N					
Poisson Mark Resight with Robust Design	PoissonMR	?PoissonMR, ?Poisson_twoMR	alpha	sigma	U	Phi	Gamma''	Gamma'		
Multiple-State Occupancy Estimation	MSOccupancy	?NicholsMSOccupancy	Psi1	Psi2	p1	p2	Delta			
Occupancy Estimation Royle Poisson Counts	OccupRPoisson	?Donovan.8	r	Lambda						
Occupancy Estimation Royle Negative Binomial Counts	OccupRNegBin	?Donovan.8	r	Lambda	VarAdd					
Open Robust Design Multi-state with State Probabilities	ORDMSState		S	Psi	Omega	pent	Phi	p		
Immigration-Emigration Logit-Normal Mark Resight	IELogitNormalMR	?IELogitNormalMR	p	sigma	Nbar	alpha	Nstar			
Robust Design Multi-state Closed with Mis-classification	RDMSMisClass		S	Psi	pi	Omega	p	Delta		
Multi-scale occupancy estimation	MultScalOcc		Psi	Delta	p					
Robust Design Multiple-State Occupancy Estimation Conditional Binomial	RDMSOccRepro		Phi0	Psi	R	p	Delta			
Robust Design Multiple-State Occupancy Estimation General	RDMSOccupancy		Phi0	Psi	p					
Density estimation with Huggins p and c	Densitypc		p	c	ptilde					
Density estimation with Huggins heterogeneity pi and p	DensityHet		pi	p	ptilde					
Density estimation with Huggins full heterogeneity pi, p and c	DensityFHet		pi	p	c	ptilde				
Cormack-Jolly-Seber model with Pledger mixtures	CJSMixture		pi	Phi	p					
Pradel Survival and Seniority with Pledger mixtures	PradSenMix		Phi	pi	p	Gamma				
Pradel Survival and Lambda with Pledger mixtures	PradLambdaMix		Phi	pi	p	Lambda				
Pradel Survival and Recruitment with Pledger mixtures	PradelRecMix		Phi	pi	p	f				
Link-Barker Survival and Recruitment with Pledger mixtures	LinkBarkMix		Phi	pi	p	f				
Cormack-Jolly-Seber model with Random Effects	CJSRandom		sigmaphi	Phi	sigmap	p				
Link-Barker Survival and Recruitment with Random Effects	LinkBarkRan		sigmaphi	Phi	sigmap	p	sigmaf	f		
Two species Conditional Occupancy Estimation	2SpecConOccup		PsiA	PsiBA	PsiBa	pA	pB	rA	rBA	rBa