



F ? @ > M G : J H > G W ? < B E :
J U ; H E H < K L < :
IGFA

F ? @ > M G : J H > G W ? < B E : J U ; H E H < K L < :

I j b \ _ ^ _ g g g b _ i j Z \ b e j z [g h e h \ e [b e k h k I Z \ e E g u ^ m g Z j h Z g k k o p b Z l j b n c c g j j j h e h \ k (I ^ Z e _ G F A) k

F. D:LMRD:

1. DZImrdb`ghl_qZljv[h\Zgkjhjlb\gwdbdb
bljZ^bpbcb

\ ijhp_kku\Z`b\Zgbu|Zkdb\ZgpygZ
[_j_#e b dZl_j
7. >himkdZijbkdy_ie_gbn^be bkslrZoh\hqg]mjZ
ijb mkeh,\bhlhlgb\ dZdbtolghr_gbg_omijhsZ_l
ju[heh\jhp_kk\Z`b\ZgbgfZggjhu

IjZ\bezu[gh e h\eb

1. GZqbgb]fhhf_g,lzh]^jZ[Zdex_gZgZ`b\drb
ijbfZgdorb[haZ]eZlu\Z_jlu[heh^he`_ig hba\h^blv
ih^k_qd\Z`b\Zgb\ulZkdb\ZjgugZ[_j_]eb
dZl_j

B E E X K L J : P B H L J ? ; H < : G B Y I J B G : > E ? @ G H K L Y F

> < H C G U E ? K D B I H < H > D B

> e b g ^ Z h c g l e c k d b a f _ j y _ h k g Z q Z r e z e f Z k l Z _ j _ i e _ l _ g d y m l b e k j Z s b \ Z g b j y Z a m x s ^ \ J h c g r e x k d r h k Z f h] h
^ Z e v g d j j m a e f Z k l Z j Z s b \ Z g b j y Z [b g Z l e x ` d b z e l d Z d h e b [b g h] r h k l j h c k b \ Z i h e v a m ^ e h y j h _ i e _ g b y i Z k d Z
i h \ h ^ d i z b f Z g d b e l d j x q d d Z \ h c g l e c k d \ h c g z y k d e ` g k z k l h y b l a h c ` _ e _ k d d h l h j z z d l b q _ b k d i b e v a h \ z e z k v
i h b f d j u [u > e y h j k d b b ^ h j u [^ e y _ k d b _ d e Z k k h u r 20 n m g l (1 0 d)] \ d e x q b l _ e v e g h ^ Z h c g l e c k d b e ` g z l v g _
[h e _ 1 5 n m l (4 5 7 f _ l j) Z ^ e y k _ d e Z k k h u r 20 n m g l (1 0 d)] ^ e b g ^ Z h c g l e c k d b e ` g z j Z g b q b \ Z 0 v k r y l Z (9 1 4
f _ l j) Z > e y j _ k g h \ h ^ g b u h j u [^ e b g ^ Z h c g l e c k d b e y k _ d e Z k k h u r 20 n m g l (1 0 d)] ^ e b g ^ Z h c g l e c k d b e ` g z _ \ u r Z 6 v n m l (1 1 8 2 f _ l j) Z

> e b g ^ Z \ h ^ d e ` g z l v h] j Z g b q 1 5 g z n l Z (4 5 7 f _ l j) Z ^ e y h j k d b b ^ h j u [^ e y _ k d b _ d e Z k k h u r 20 n m g l (1 0 d)]
\ d e x q b l _ e b 3 0 m m l Z (9 1 4 f _ l j) Z ^ e y k _ d e Z k k h u r 20 n m g l (1 0 d)] > e y j _ k g h \ h ^ g b u h j u [^ e b g ^ Z \ h ^ d e z y k _ o
d e Z k k h u r 20 n m g l (1 0 d)] ^ e b g ^ Z \ h ^ d e z y k _ o

> e b g ^ Z \ h ^ d e z j _ ^ _ e y d Z d y [s Z y e b g ^ Z l e x q Z x s Z y [e x [u i j b f Z g d d j x q d d b ^ j m] b j b k i h k h [e _ g b y

KmffZjgZeyb gZhcgc kdb h\h^ qZ^he`gZ_\urZ 20 nml k(0,1f_lj)Z^e_ kdb_ deZkK(20 nmgI(10 d])
\dexqbl_ eb49 mml k(12,19f_lj)Z^eyk_ deZkKhur 20 nmgI(10 d]) ^eyhjkdb b^hju[KmffZjgZeyb gZhcgc kdb
bih\h^ qZ^he`gZ_\urZ 10 nml k(3,04f_lj)Z^eyj_ kgh\h^ gtu^hju[

B E E X K L J : P B B H L J ? ; H < : G B Y B D J X Q D : F
G : L M J : E V G B B K D M K K L < ? G G U @ B < D B

J: A J ? R ? G_H k e r d d j x q d m \ k l h y j m h l ^ j m] g [h e _ q _ f g Z 8
^x c f h (45,72 r K D l & p % d , 5 k < T t b \$ e f T f -50.1267 -1.1622650279>/TT4 1 T f 3.18 0 T D 0 T c () T j /TT3 1 T f .2533 0 T D -.0018 T c 0267025a

J: A J ? R ? G i H k d h e m d r m b j x q d h j Z k i e Z] Z k A b j l g h k b l _ e v g h
^ j m] h g h [e b ` , _ q _ f o k h [k l \ _ g ^ e z b y g b z g _ ^ Z e 18 ^ x c f h (45,72
k j \ k e m q Z k i e v a h \ g z g b y \ b 02 ^ x c f h (80,45 k j \ k e m q Z _
b k i e v a h \ i z l g b z y g . h d

J: A J ? R ? G b H k e m q Z Z ` b \ h b d k e m q Z b f Z g . h @ Z e h ^ g h p h a
d j x q d h j h i m s _ g h j _ n a r d h j m] h] h

G ? J: A J ? R ? G i H k d h e a z m g d j x q h g d \ o h ^ b e h l g h
g Z ` b \ d m _ i j b d j _ i e d m _ g Z ^ ` ` g b f j Z a . h . f _ y \ e y _ l k y
k \ h [h ^ l g h e l Z x s b f k e y l d Z q Z x s b d k j x q d . h f

J: A J ? R ? G i H k d h e m d r m b j x q d i z h l g v o h ^ y l g Z ` b \ d m
g Z ^ ` ` d m _ c j b d j _ i e _ g u e h u g _ ^ h i m k l b f k f e b
j Z k k l h y g b ^ m r d Z f b j x q d h j _ \ u r Z e l 18 ^ x c f h (45,72
k j .

; := J U B I ? L E B

J: A J ? R ? G d H k i e v a h \ z g b z l _ j z l d f k e m q Z k e v n n _ d l b v e z y d Z j _ \ d b i j _ \ u r Z 30 n m l k 19,15 f _ l j Z

J: A J ? R ? G d H k i e v a h \ z g b z l _ j z l d f k e m q Z k e h [s Z y e b g Z] j g _ i j _ \ u r Z 8 l n m l k 2,44 f _ l j Z



J: A J ? R ? G d H k i e v a h \ Z h [s Z y e b g a h k l h \ i n d e l h i j _ ^ _ e y _ d l z g Z k k l h y g b g Z q Z j e z d h y l d h l _ j r b g u _ l e b
] h l h \ h k h k l h y g b g ^ h e ` g z _ \ u r Z 2,44 f _ l j Z 8 n m l h \

<KIHFH=:L?EVGDJXQDB

KHHL<?LKL<M.P2;H<:GBYGFFA:
<kemq [h]Vki hfh]Zl_evgijxq dZebgZ
ih^_kdrbdeZ^u\Z_l h e l h j u e b g d j x q d Z
(baf_j_gghc^nf eb`Zcr_lh q d h d j _ i e _ g d y
ijbfZgdb_l h q d t b c a] b [d] x q d Z

KHHL<?LKL<M.P2;H<:GBYGFFA:
>himkdZ_bllki h evah\Zg_bk d h e v d j b x d t h ^ g h \ j _ f _ g g h
>\h c g b d b j h c g b d b f h] m b k i h e v a h \ Z l v k z y q _ k l \ _
_ \ k i h f h] Z l _ e v d j x q d . h \

KHHL<?LKL<M.P2;H<:GBYGFFA:
<ki h f h] Z l _ e v d j x q d (b e b d j x q d] b h] m d j _ i b l v k y x [h f n b a ^ \ m d h g p l h] b f Z g d b

BKDMKKL<?GIGIBF:GD:B
<ki h f h] Z l _ e v d j x q d f h] m l
b k i h e v a h \ Z k e k y \ u f b
b k d m k k l \ _ g t j b f z g d Z f a b Z
b k d e x q _ g b j b f Z g h k x [d h x

F ? @ > M G : J H > G W ? < B E : G : O E U K L H < H C
E H < E B

aZ\bkkbfhkllbkihevah\Zgzh]jfbZebhebq_kl\Z
k_dpbcn^bebsZhe`gukhhll_lkl\h\dlvhll_qZlv
h[s_ijbgylgfZoeuklh\ijZdlbdb_ljZ^bpbbyH[sZy
^ebgZ^bebsZfh`_l[ulvf_gvr6_nmlh(1,82 f), ijb
wlhex[u_m^bebsZlhlju^Zxlju[heh\gm_hijZ^Zggh_
ij_bfms_kl\ih^e`_Z^bkd\ZebnbdZfbZy^ebgZ
gb`g_qZkljmdhyldbbebsZf_jy`fZy^nk_j_^bghc
gh`dZlmrdbdhhgplmf^bebsZfh`_l[ulvhevrr_klb
^xcfh<kemqZmjmqm^debebn^bebsiZki>ck
^ebgfhbevrl1_nmlh[sZyebgZb`g_qZkljmdhyldb
m^bebsZaf_jy`fZy^mk_j_^bggk`dbdZlmrdb
dhgplmf^bebsZfh`_lij_\urZll0^xcfh\

ljbfZgdZ^he`gZij_^klZ\eylkh[hc dZdteb[h
h[s_ijbagZggbc bkdmmkl_gfgrdb d dhlhjuf
hlgkylklybf_ju[Zdl_çefumrdbgZljm[dZhdju_
fmrdbkmo bmrdbgbfn,uihii_jub`mdBkihevah\Zgb_
dZdteb lhgbluefbguobih\jbfZghab[hZlmjZevguo
bebdhgk_j\bjh\ZgZùw\hdZckZfhklhyl_eZgb
ijbdj_ie_ggdómrd_kljh]haZij_sZ_lkZaj_rZ_lky
bkihevah\ZgZvdlh^ghémrdbBkihevah\Zgnr_d
^jhii_jk_jogbmr)caZij_s_lkZfhl_o•1r^A&Bfg”2k bZ(€D

D. D:LMRD:

DZlmrdbZhe`gZh[eZ^ZldhgkljmdpbcicpbZevgh
ij_^gZagZq^egZoeuklre\hveGZ_j_^Zlhqguc
dhwannbpbbeplkihevam_lfuiclhjfhazg_gZeZ]Z_lky
gbdZdhdjZgbq_gZdkdexq_gb`dekemqZdh]^Z
ju[heh\fh`_l ihemqblgy_hijZ^Zggh_bfms_kl\h
AZij_sZ_bkihevah\Zgbdljbg_dkZlbnrbdZlmrkd
we_dljhgrijZ\egb_f

E. DJXQDB

KlZg^ZjlgZydZfh`_l[ulvk\yaZgZh^bgZjgheeb
^hcgghfdjxqdZeb[hgz^moh^bgZjgudjxqdZo
jZkiheZ]ZxsbbZgy`fhkllhjhcdjxqhd lZg^fg_
^he`_goh^bdZj_^_edjuev_\
fmrdbJZkklygfb`^mmrdZfbdjxqdhg`^he`gh
ij_\urZll0^xcfh(15,24 k). Bkihevah\Zjhgcbgdh\
aZij_sZ_lky

F. IJBF:GDB

6. AZij_sZ_lky

1. Baf_j_gju[u^he`gújhbah^bklkbykihevah\Zgb_fqzkld o\hklZu[u gZ baf_jbl_ev gjhfkikhk[e_gbb hnbpbZevgh]af_jbl_evghijbkiikhk[e_ggFA.
2. Ghkh\Zzkjju[u kaZdjulujfhf b[_aijbfZghd ih^t_fgújbkiikhk[e^gheç grZibjZl\ghkh\hc h]jZgbqbl_ev
3. Baf_j_gphyba\h^y\kyu[u meh`_ggZc

baf_jbl_evjgfkikhk[e_kg bjomkZfhic_j^ggZklb ju[u kaZdjulujfhf^hkj^ag gZklbZ^ag djZp\hklZ

4. <k_baf_j_gbye`guijhba\h^bklkZgibf_ljZo

5. Ju[Z^ebgZdhlhjhchdZau\Z_fk^am^mfy kZglbf_ljh\ufb_gbyfjbkljbjmihgZbf_gvrbam ^\mægZq_gZci jbf,jju[ZjZaf_jdh lhjhdZau\Zxlky f_`^46 kZglbf_ljZfhe`gbZ_laZj_]bkljbjh\Zggm^

B. LJ?;H<:GBDFBGBF:EVGH>CEBG&EY K<H;H>GUO?DHJ>H< JZaf_ju[dhlhjú_]bkljbjm^k^y\h[h^gdZl_]hjb c j_dhj^h^he`gu khklZ\eyl[he__ihev\bguhl azj_]bkljbjh\ZfZgk]hfZevgZd_h_jZeY Zgg h\h^Z ju[dhlhjújb\h^bklkyibkqZaj_r_ggúohju[

C. FBGBF:EVGU?LJ?;H<:GBYD >EBG? G?H;OH>BFH&EY LH=HQLH;U IH;BLV KMS?KL<MXSBQ?DHJ>BEB IH<LHJBLV ?=H

1. >eyh]hqlh[úh[blm`_kms_kl\mxs_bdh,j^Zaf_ju ju[u^he`gdZdfbgbfmúZ2 (^Z kZglbf_ljZevr_ kms_kl\mxs_]h j_dhj^Z

2. IhcfZggZy[Z^ebgZhlhjhkh\iZ^Zk_l_ebqbg hc kms_kl\mxs_dhj^Z[hj_\urZ_lf_gvr_q_fgZ (^Z kZglbf_ljZ^_kqblZlvikylhj_gbjfdhj^Z kemqZzy\kbi\lhj_gbjfdhj^Z dhlhju^h\e_q_gu [he_`^móhcFZggúa] ^ebgZhe`gZjZ\gb\Zlky i_j\hgZqZevjgúdhj^h(fk ju[h,c ihcfZgg h\h)c GbdZdhju[h[eZ^Zxsú_gvrbfjZaf_jZfbq_f i_j\hgZqZeYgdh]y[u[Z ihcfZggZy\h)c g_[m^ml ijbgbfZlvkjZkkfhlj_gbx

D. LJ?;H<:GBDNHLH=J:NBJH<:GBX Nhlh]jZnjbkueZ_fú_klkaZy\dh^e`gkúh^_j`Zlv i_j_qbke_úúmxgnhjfZpbx

1. Bah[jZ`_gb[u gZ baf_jbl_ev gjhfkikhk[e_\gbkx _^ebg gZdhlhjhq_l dVb^g hheh`_gghkh\kZklb o\hklZu[Zfh`_lijbgm^bl_emghj`b\ZlvklZdhf ihev`_g bgh wlh^he`g h kms_kl\eylZdkyfh[jZahf qlh[ú_aZkehgyiekhv_gju[u gZ baf_jbl_ev gZ e_

2. Kgbfdhj migu feZghifhdZau\Zxishb`_gghkh\hc

3. Bah[jZ`_gb_ju[heh\Z k ju[h.c
4. Bah[jZ`_gm^bebsZ dZlMrdbdhlhju[ueb bkihevah\Zg bbf dju[u

H[sb_iheh`_g b g Z b e m q r j Z c d l b d _ h[jZs_gkyueh\e_ggbphc >eyba/e_q_gu[ba\h^uk p_ev^hdmf_glbjh\Zgby j_dhj^Z[heh\he`gúhevah\Zbklk\hbfpmdZfb eb[hih^kZdhk[_amaehljhg_abg_gghcdhçey fbgfbfaZphj_`^_gbkæbaú q_rmb>himkdZ_lky bkihevah\Z]g[guæZ\Zlhi^fh]Zxsbój_h^he_lv khijhlb\e_gb[u H^gZd[hevr m^u[mg_ke^m_l ih^gbfZlv_jlbdZevighkdhevd hmfh`_lijb\klú ih\j_`^_gdZd_exklguo &%&& &B&Z



I J ? K G H < H > G U B > U

:jZ\ZgZ	Osteoglossum bicirrhosum	41 kf
;ZjjZfmg^b	Lates calcarife	62 kf
HdmgVkljZebckdbc	Macquaria novemaculeata	27 kf
Hdmjvevr_jhluc	Micropterus salmoides	48 kf
Hdmfzejhjluc	Micropterus dolomieu	34 kf
HdmgnehkZ(uij_kgh\h^guc		

L J ? ; H < : G B Ø F B J H < U F J ? D H J > : F

L j h n _ c g Ź Ź h ` _ l j z k k f z i j b \ z i d z q _ k i j \ _ l _ g ^ m x g z d e m q _ l g l z _ l m j k z h j ^ g l h e v d h h f k e m , q z k e t b g z u e z
i h c f z g z h h l \ _ l k l k b b ` ^ m g z j h ^ g j u z v b e z f b [h e h \ k l g z ` i j b \ h ^ b l k g n h j f z p b g z i _] h j b y j h \ u p _ d h j ^ h \
l j _ [h \ z g b y j z \ b e z h ^ z q b z y \ k k i j b k u e z _ f u a z y \ d z g z p _ d h j f z i _ j b z l e l z g h \ y k k y k i \ _ g g h l g f a x

D Z I _] h j f b b j h \ u g _ d h j ^ h \

H [s Z y g n h j f z p b y

IGFA j _] b k l j b j m b j h \ u j _ d h j ^ d i z d e y j _ k g h \ h ^ g z d
^ e y f h j k d b \ d ^ h) u [i h d e z k k e z f k , d d e z k k i z h ^ d b \\
d z i _] h j d b _ k g z k l (z [k h e x , l z i z d ` j _ d h j ^ h h ^ e b g _
j u [u ^ _ l k d b b x g b h j k d b j o d h j ^ h b e y l h] h q l h [u
d \ z e b n b p b j h g z j v k y h , j h c f z g g j z y z ^ h e ` g b z _ l v _ k
g _ f _ g _ 1 n m g l (z , 4 5 3 d) , b _ _ \ _ k ^ h e ` _ g j _ \ h k o h ^ b l v
^ _ c k l \ m x \$ b d h j ^ g u h d z a z l g z r b k l z g h \ e _ g g e n b x b g m
e b [h m ^ h \ e _ l \ h j l y l v h \ z g b g f f b g b f z e v g h f r k r i j b

J_dhj^j_]bkljbjmxNey ke_^mxsdeZkkk\kdb
ih\h^dh\

1	2	1	2
2	4	2	4
3	6	3	6
4	8	4	8
6	12	6	12
8	16	8	16
10	20	10	20
15	30		
24	50		
37	80		
60	130		

AZbkdexq_gdZfl_]hjb\k_kgZkjbh]jZgbq_gly
deZkkZf_kdbZeZ]ZxNeyfgh]bdb^h\ju[Gb`_
ijb\h^ylky

Z f _ j b d Z g (k) p i z i y _ d j Z k g A	<i>Epinephelus morio</i>	24 d	[50 n m g]h \
I Z e l m h f u d g h \ _ g g u e h d h j / u	<i>Hippoglossus hipp.</i>	60 d	[130 n m g]h \
I Z e l m i Z e b n h j g b c R a d i c h t h y s	<i>californicus</i>	37 d	[80 n m g]h \
I Z e l m i o h h d _ Z g H i p p o g l o s s u s	<i>stenolepis</i>	60 d	[130 n m g]h \
E Z d _ ^ j Z g h Z f _ j b d Z g S e i d e y	<i>rivoliانا</i>	60 d	[130 n m g]h \
D Z j Z g d h e v r h	<i>Caranx hippos</i>	24 d	[50 n m g]h \
D Z j Z g d h e v r _] e Z	<i>Caranx latus</i>	24 d	[50 n m g]h \
D Z j Z g d h e v r h b o h h d _ Z g C a d a m e	<i>caninus</i>	24 d	[50 n m g]h \
E h k h X v k l j Z e b c k d h e v r h z j j b /	<i>Arripis spp.</i>	15 d	[30 n m g]h \
F Z e u d h k l h q g l u r c g (p Z \ Z g Z E u t h y n n u s	<i>affinis</i>	15 d	[30 n m g]h \
K _ e v [h v e v r _] e Z w a z i y i	<i>Elops spp.</i>	15 d	[30 n m g]h \
E b o t h y j u d g h \ _ g l o c z i a m i a		24 d	[50 n m g]h \
L _ j i m a j m [Z V O p h i o d o n	<i>elongatus</i>	24 d	[50 n m g]h \
F Z d j _ e h j h e _ \ k S t r y m b e r o m o r u s	<i>regalis</i>	10 d	[20 n m g]h \
F Z d j _ e v			

n_^_jZevlgm]bZe tk m^rZZI,ZjZki eh`_ggh]h
gZ_jjb1hj]b]m;jjZ\Zj^lZlZNe h j b^G Z^e_`Zsb_
km^j
(ii) hldZau\Z_Hk y\h_]hijZ\Z\hajZ`Zli h ih\h^m
_^bgkl_gogtkcd exqbl_elv g j h d h j b Z e v l g ^ k m ^ g h k l b
lZdbkam^_[gZ]a[bjZl_eevk[lh f maG Z^e_`Zk b o;h\
(iii) kh]eZrZ_gl_kiy^Z\Z\krajZ`_gtbeclj_l_gab b\
h^b g alZdb km^h\hlg hr_g b]b],hqlhlZdhk m^_[gh_
jZa[bjZl_e,vi k h \h^bf h k h h l _lkl\m * s n, f i j h o h^bl
_g_m^h[ghk]_

ij_^hkIz\eg Zh e gZy\pZ^jZkkfZljb\Zlvky
kfukej_]bkIjZpb\hja^zb \uiheg_g\be_^mxsbo
mkeh.\bc

1. G_iheg Z y\dZ_kl_k h[tykg_gdh],hihq_fm
hIkmlkl\rh k^_evgqZklbg nhjfZp bhemq IGFA \

2. HIkmlkl\bk hhl_lkl\mxs^Zg guo^he`gh[ulv
ke_^kl\bh fklhyl_evklhlhju gZoh^yl\ky_kn_ju
dhgljhj\he h gZijZ\eyxsa Z h\g Z dhj^

3. <kyg_^hkIzxb g h jfZ p^t h e`g[Zlvij_^hkIz\el_gZ
l_q_gb_i_jbh^Zj_f_gb dhIhju cy\ey_lkjZamfgh
h[hkgh\Zggkf mq_lhfdhgdj_lgub[klhyl_evkl\
HdhgqZl_evg h_gb_hlghkbl_evg h hegu eZy\hd
ijbgbfZ_Bky hedh IGFA.

Lj_[h\Zg\ya_rb\Zgbx

1. <kyij_l_g^mxs Z ghj^u[Z^he`gZa_rb\Zlvky
_kZdhIhjujhrebijh_jdgZlhqghk\la_rb\Zgb y
bf_xlkhhll_lkl\mxs bjb bnb dZul^Zgg udc db ebb[h
d\Zebnbpbjh\Zg g\ufbj_^blh\Zgh j\Zlg baZp b yfb
\k_okemqZ ydh]^Zbf__lk yhafh`ghkldv ijhp_^mj_
\a_rb\Zggy_h[oh^bfjh\b\e_dZlg_aZbgI_j_kh\Zgguo
k\b^_l_e<lc_bkihevam\fk u^he`g ujh_jylvlgZ
lhqgh hlv_jlbnbpbjh\Zlvk yh^gh j Z aZ^_gZ^pZlv
f_kyp<lhfk &P& g D €DS 1 Ä&'P%&€ lhqdh juq l b bgn5ö g^he g j_`p%ö&p& 5())Tj/TT3 1 Tf -28 2 0 TD <0262>Tj/TT4 1

